

U.S. ENVIRONMENTAL PROTECTION AGENCY

Section 316(b)Public Meeting

Friday, September 11, 1998
Alexandria, Virginia

P R O C E E D I N G S

1
2 MR. ELDER: We've got a couple new faces from
3 yesterday and mostly returnees, veterans of two days
4 worth of talking about 316(b). The other day we talked
5 about technology issues in the morning and cost issues
6 in the afternoon.

7 I'm sure that we now have best technology in
8 the audio system, and that won't be a problem this
9 morning.

10 Today we're going to concentrate on
11 mitigation issues for the first couple of hours, and
12 then we're going to do a meeting summary and identify
13 yet again any remaining issues. I had asked people
14 late yesterday if they thought of any additional issues
15 that EPA needed to consider. It's still not too late
16 to bring those up, but at this time I ask you to wait
17 until we get done the mitigation discussion rather than
18 bringing it up now.

19 With that I'd like to introduce Brad Mahanes,
20 who was one of the presenters at the first meeting.
21 Brad is a biologist with the Office of Regulatory
22 Enforcement, and he's going to kick off this discussion
23 about mitigation.

24 Brad?

25 MR. MAHANES: As Jim said, the thing we're
26 going to talk about this morning is mitigation.
27 Mitigation has traditionally been employed by the

1 Agency as a mechanism for addressing environmental
2 damage, environmental harm that has already occurred.
3 We do this with 316(b), we do this with other portions
4 of the statute, as well.

5 What we would like to talk about today, this
6 morning, are really two issues. The first issue that
7 we'd like to put forth for comment is, to what extent,
8 if any, within the context of this rule-making, should
9 EPA consider a soft control technology? And a soft
10 technology would be prospective in nature, it would
11 look forward. Mitigation is something has occurred,
12 you know what the damage is, and you attempt to
13 interpose something to repair that damage. What we're
14 looking at is to what extent a soft control technology
15 that would model up the likely damage and then attempt
16 to address that would be appropriate. Any soft control
17 technology would necessarily have to have a direct
18 nexus to the capacity, construction, location, and
19 design of the cooling water intake structure.

20 That's the first issue - before any damage
21 has occurred, to what extent would it make sense to
22 have, to have some sort of soft control mechanism
23 accommodated in the rule.

24 The next issue is, If we accept
25 hypothetically that there will be a site-specific
26 approach taken -- that's not fixed anywhere, just for
27 the purposes of that one thought channel- where BTA is

1 determined on site-specific basis, and would fail to
2 fully minimize, however we choose to define that, to
3 what extent should mitigation be accommodated and how?
4 How is going to be site-specific. I think we've
5 recognized that, but some more specifics to the extent
6 of how would you monitor it, how would you set it up.

7 Those are the two general issues or points we
8 would like to get comment on today, and I think that's
9 enough context. I think this is going to be an issue
10 that time is going to be better spent listening to you
11 all then hearing me talk.

12 Jim?

13 MR. ELDER: Does anybody have any preliminary
14 questions for Brad about the context of mitigation? Or
15 would people just like to launch into some of the
16 subsidiary questions?

17 One logistics thing. I failed to have some
18 new people at the table identified, so I'd like them to
19 do that. Why don't we start with Doug, and you
20 identify yourself.

21 MR. DIXON: Doug Dixon from EPRI, a fisheries
22 biologist.

23 MR. ELDER: And the man who needs no
24 introduction.

25 (Laughter.)

26 MR. WRIGHT: Jim Wright. I'm an aquatic
27 ecologist. I've worked for TVA for 22 years.

1 MR. BAILEY: David Bailey. I'm with Potomac
2 Electric Power Company, and today I'm representing UWAG
3 and EEI.

4 MR. ELDER: Okay. Ma'am?

5 MS. NOBLE: I'm Mary Ellen Noble. I'm
6 Associate Director of the Delaware Riverkeeper Network.

7 MR. ELDER: Okay. You, sir?

8 MR. GORDON: I'm Bill Gordon, owner/operator
9 of Sweetwater Ranch in the mountains of Colorado. I
10 wanted to demonstrate that best available technology
11 saves your skull from a lot of sunburn.

12 (Laughter.)

13 MR. GORDON: But I'm here not only
14 representing myself, but also was the past director of
15 the National Marine Fisheries Service in Washington,
16 D.C., and responsible for the stewardship and
17 conservation of the nation's marine and aquatic
18 resources, and part of that was deputy regional
19 director and regional director in the northeast, so I'm
20 very familiar with power plant operations. And I've
21 also served as an advisor to public service electric
22 and gas companies. So I've remained involved in 316(b)
23 and other resource issues since retirement in '87.

24 MR. ELDER: Okay. Next, the mitigation
25 story. So who wants to launch into what role
26 mitigation should play, if any, in meeting 316(b)
27 requirements?

1 MS. HANCZOR: I believe mitigation should
2 play absolutely no role when we are discussing 316(b).
3 The plain language of the statute says that the
4 location, design, construction, and capacity of the
5 cooling water intake structures shall reflect best
6 technology available.

7 That means that this is a technology-driven
8 statute. The technology must deal with the specific
9 harm. The specific harm is impingement and
10 entrainment. BTA must address that harm, not larger
11 harms in the ecosystem, but the harms that are caused
12 right at the intake structures. Therefore, the BTA
13 involved can only be in reference to those intake
14 structures, and such things as mitigation, as in
15 replacing wetlands or fish hatchery programs or fish
16 restocking programs simply do not comply with the
17 mandates of the statute.

18 MR. ELDER: Okay. Ed?

19 MR. RADLE: Relative to mitigation, the
20 Council on Environmental Quality at 40 CFR 1508 has a
21 hierarchy of these things in terms of mitigation, and
22 it indicates that there are five steps -- you avoid the
23 impact altogether, you minimize impacts by limiting the
24 degree or magnitude of the action, you rectify the
25 impact, you reduce or eliminate the impact over time by
26 preservation or maintenance operations during the life
27 of the action, and, finally, as the last step in the

1 process, you compensate for the impact by replacing, et
2 cetera.

3 So I think it is reasonable to consider it,
4 but I think it is important to keep it in perspective
5 in terms of a hierarchy or the sequence that you would
6 go to. In other words, it is the -- it's a point of
7 last resort from our perspective, not that it's not to
8 be considered, but there are other things to thoroughly
9 evaluate before you get to that stage.

10 MR. ELDER: Ed, could I clarify? Are those
11 from CEQ's NEPA regulations?

12 MR. RADLE: That's correct. Yes.

13 MR. ELDER: Okay. Not from anything
14 referencing 316(b), correct?

15 MR. RADLE: That's correct.

16 MR. ELDER: David?

17 MR. BAILEY: Okay. UWAG does believe that it
18 can play a useful role in the 316(b) process, but I'd
19 first of all like to suggest that we believe
20 "enhancement" may be a better term than "mitigation,"
21 simply because historically a lot of technologies have
22 been viewed in terms of mitigation measures, and so to
23 avoid confusion we suggest the term "enhancement."

24 Several concepts associated with defining
25 enhancements would be it's not an addition or a
26 modification to the existing intake structure. Second
27 of all, it is something that would be voluntarily

1 offered. And, thirdly, it would be an action that
2 would materially benefit the affected population,
3 species, or fisheries in question.

4 We believe there's two times where it is
5 appropriate to consider this in the process. First of
6 all, if a facility had previously engaged in an
7 enhancement, we believe, though, the actions that were
8 taken in terms of those enhancements to address a
9 316(b) issue should be considered today in terms of
10 whether or not adverse impact is still occurring.

11 Second of all, if it is determined that there
12 is an adverse impact, again, we believe it is
13 appropriate to consider enhancements as a way to
14 address the impact.

15 We believe that in some cases that
16 enhancements may offer a way to maximize the benefits
17 to the affected population, species, or fishery, as
18 opposed to moving ahead with a technology to address
19 the impact; that you could, in fact, do more for the
20 affected population or the fishery through the
21 enhancement than a hardware modification fix.

22 We believe that the permitting agency should
23 be allowed to consider any reasonable mitigation or
24 enhancement offer, and that should be put into some
25 kind of formal regulatory agreement.

26 And, further, we believe it is reasonable to
27 incorporate into that agreement a requirement, an

1 obligation to do monitoring and to ensure that the
2 outcomes that were going to be achieved by the proposed
3 enhancement did, in fact, occur.

4 MR. ELDER: One point of clarification. If I
5 understood you right, you made it sound as though the
6 offering or the proposal would only come from the
7 facility but not from the regulatory agency.

8 MR. BAILEY: That's correct.

9 MR. ELDER: Can it happen in the other
10 direction?

11 MR. BAILEY: We think that these should be
12 voluntarily offered on the part of the facility because
13 they are not BTAs. We would agree with Theresa that,
14 from the regulatory end, their focus would obviously be
15 on the technology, but that the utility would have the
16 flexibility to suggest this alternative.

17 MR. ELDER: Okay. Bill, did you still want
18 to make a comment?

19 MR. RADLE: Yeah, just to piggyback on the
20 end of Ed's comments in terms of mitigation, I think
21 that you make a good point in terms of that I think
22 what may be talked about here you could term it
23 "enhancement." We may term it "compensation." I'm a
24 little bit nervous about -- I hate to get into a
25 semantics argument -- about "mitigation."

26 From our perspective, "mitigation," the
27 dictionary definition I think goes something like,

1 "making less bad," and that includes a suite of things,
2 and we strongly believe in the sequencing of avoid,
3 minimize, et cetera, and then finally getting down to
4 compensation or enhancement as being one of the suite
5 of things. So, you may want to consider how you use
6 the word "mitigation."

7 But then, when you get into either
8 compensation or enhancement, the Fish and Wildlife
9 Service I believe, in their regulations, under the Fish
10 and Wildlife Coordination Act, has another sequencing
11 that the first choice is to replace in-kind on site.
12 Second choice is in-kind but off-site nearby. And then
13 starting to get out-of-kind on site and then out-of-
14 kind off-site as being the least. So, we also recommend
15 you for your consideration the sub-sequencing for
16 compensation enhancement that Fish and Wildlife Service
17 uses in their regulations.

18 MR. ELDER: Okay. Bill Gordon?

19 MR. GORDON: I certainly appreciate the
20 difficult challenge that EPA faces in striking a
21 reasonable balance as development of an effective
22 316(b) rule takes place, but I commend the Agency for
23 pursuing the site-specific approach based on science
24 and technology that will focus on real problems and
25 seek cost-effective solutions for protection and
26 enhancement of marine habitats and their vital natural
27 resources.

1 Mitigation -- and I, too, prefer
2 "enhancement" or "conservation measures" -- have an
3 important role to play in protecting, restoring aquatic
4 habitats as an element of a national strategy to
5 improve the management of these essential natural
6 resources.

7 I would suggest that EPA can play an
8 extremely valuable role here as taking national
9 leadership to do so, since there is no one truly in
10 charge and it's an opportunity for them to step to the
11 plate.

12 But environmental enhancement projects have
13 been very much a part of activities that deal with
14 aquatic habitat for over half a century, and they've
15 provided important cost-effective and lasting
16 environmental benefits, and through appropriate rules
17 and incentives, in this instance EPA should encourage
18 permit seekers to consider such measures in appropriate
19 circumstances after those other aspects of it have not
20 born fruit to step forward as mitigation to offset
21 those losses that otherwise cannot be dealt with in a
22 cost-effective way.

23 And certainly scientific knowledge and tools
24 are available to assist in appropriate design and
25 monitoring of enhancement projects. Such can be used
26 also to generate reliable predictions of benefits to be
27 expected from the enhancement projects that are

1 proposed by the permittee and to estimate the value of
2 such projects to the ecosystem after completion.

3 I stress that project performance and
4 evaluation needs to be determined on a case-by-case
5 basis to allow for the site-specific conditions. And
6 there are many examples, of course, of where there have
7 been excellent enhancement projects undertaken.

8 I should also point out that these agencies
9 and elements across the board have invested hundreds of
10 thousands of dollars in science and technology that
11 doesn't cost the taxpayer one cent. It has been
12 ratepayers that have borne the bill for this. But
13 without that investment, we would not have advanced the
14 science and technology dealing with mitigation nearly
15 as far as we have over the last half century.

16 MR. ELDER: Kristy?

17 MS. BULLEIT: I'd just like to expand a
18 little bit on the legal basis for using environmental
19 enhancements or conservation measures.

20 Dave alluded to some of them. It's our view
21 that the first question asked under 316(b) is, Is
22 there, or is there reasonably likely to be, an adverse
23 environmental impact? And we believe that at that
24 point it is possible for a permittee to bring forward
25 proposals for enhancements that will ensure that there
26 is not adverse environmental impact.

27 We agree that, as a practical matter,

1 enhancements are not part of the design, construction,
2 location, or capacity of the cooling water intake
3 structure, and that's part of that bag of technology
4 tools that the Agency can consider for purposes of
5 imposing requirements. But the Agency and the
6 permittee or others can propose enhancements that would
7 avoid adverse environmental impact. They cannot be
8 mandated, but they could be proposed and considered for
9 purposes of assessing whether there will be an adverse
10 environmental impact.

11 If they're already existing, if they have
12 already been undertaken and their benefits have accrued
13 to the population, then, in our view, they have to be
14 considered in assessing whether or not a given level of
15 effect will create an adverse environmental impact.

16 They simply can't be divorced from the
17 assessment that's made of the possible impact of the
18 facility. If they're proposed, then the proper thing
19 to do is to consider whether or not they will, as Dave
20 said, have a material effect on the source of the
21 impact or otherwise enhance the ecosystem so that
22 impact won't occur, and there are various regulatory
23 tools that can be used to ensure that there is time for
24 those to proceed, like compliance schedules.

25 MR. ELDER: Okay. so, to clarify what you
26 just said, if it is voluntary in the first instance on
27 the part of the facility, then it would be permissible

1 to be, from your point of view, to be incorporated in
2 the permit document?

3 MS. BULLEIT: Yes. I think it could be
4 incorporated as part of the permit conditions. There
5 are many conditions where -- I mean, all permits are
6 predicated on certain assumptions about how a plant
7 will operate, you know, what its components are, and
8 other measures, and it certainly is something that
9 could be incorporated there.

10 If those things change, then the Agency gets
11 another look at the permit. And in the same way, these
12 kinds of enhancements can be incorporated into the
13 permit conditions, and then that provides an
14 enforceable way to make sure that they are -- that
15 those obligations are met, and that, if anything
16 changes, the permit can be looked at again.

17 MR. ELDER: Others? Theresa?

18 MS. HANCZOR: Basically, first of all I'd
19 like to warn the EPA that if they continue on this path
20 with mitigation as a way to comply with BTA, they're
21 going down a slippery slope, and basically a complete
22 abdication of your responsibility to enforce the
23 statute.

24 If we go along with what the utilities are
25 saying, which is basically that we can minimize impacts
26 to indigenous species by replacing organisms that are
27 farmed in a fish hatchery, we realize how ludicrous

1 that argument is, because if you're trying to address
2 long-term population effects, you're dealing with a
3 moving target, and those effects are impossible to
4 predict. I know that from first-hand experience
5 negotiating with the DEC and the utilities for the past
6 five years on the Hudson River settlement agreement.

7 In the most egregious example, which has
8 taken place in the State of New Jersey on the Delaware
9 Estuary, one of the most productive estuarine habitats
10 in the world, what has happened is that the EPA mandate
11 of 316(b) has basically become -- basically been
12 sanctioned by doing mitigation so that there is no
13 reduction in entrainment losses due to improvements to
14 the technology at the intake; rather, acres of wetlands
15 are going to be replaced. And that program, as it is
16 now, is a failure.

17 I think that Congress intended for the harm
18 to be rectified by the statute, to be technology which
19 minimizes a specific entrainment, the specific harm
20 that is impingement and entrainment.

21 When we look at the case that I referred to
22 on the Delaware where they have an intake capacity of
23 3.2 billion gallons a day, probably the largest or the
24 second-largest capacity in the world, we have the
25 following losses: 17,909,400 pounds of bay anchovy,
26 11,448,890 pounds of wheat fish, 38,969 pounds of white
27 perch.

1 According to the report that was issued in
2 that case, the adult losses for herring, spot, and
3 white perch exceeded the average commercial or
4 recreational fishery for the Delaware estuary for the
5 periods of 1975 to 1980.

6 The report also suggested that the only way
7 to stop this trend was immediate reductions in
8 impingement and entrainment, and closed-cycle cooling
9 was recommended. Unfortunately, the state capitulated
10 to pressures and we now have a failure of mitigation.

11 That's why I'm warning about the slippery
12 slope.

13 MR. ELDER: Theresa, could you cite the --
14 give me a citation for that report?

15 MS. HANCZOR: Yes, I can. It was a report
16 done by VERSAR, and I will give you the citation later.

17 MR. ELDER: Deborah has politely reminded me
18 of some of our original ground rules, which were that I
19 had asked people at the previous meeting and yesterday
20 and at this one to try to refrain from talking about
21 particular complaints or facilities or particular
22 companies, so I urge you to -- it certainly is valued
23 as examples. I don't want to get into slippery slope
24 of getting into a point and counterpoint about a
25 particular facility.

26 Mr. Gordon?

27 MR. GORDON: Thank you.

1 I would point out that making a decision on
2 whether an appropriate or particular enhancement
3 project should be undertaken or not depends heavily on
4 whether there is reasonable probability that the
5 desired habitat or aquatic resource's improvements can
6 be achieved. And some projects certainly have achieved
7 that and some have not.

8 But, as a first priority, it must be a
9 determination of the nature and extent of the potential
10 adverse impact to be caused by plant operation, and, as
11 EPA has indicated, that means that there must be some
12 idea of effective losses at the population or community
13 level for a particular species.

14 Very recently the Delaware River Basin
15 Commission has issued a report that the stocks of fish
16 in the Delaware Bay have improved significantly and at
17 the recent Atlantic States Marine Fisheries Commission
18 there was discussion that striped bass could be deemed
19 fully recovered.

20 If you look at the long-term trends in
21 fisheries production on the Atlantic Coast, many of
22 them have declined, but in no instance that I've ever
23 looked at -- and I've looked at a lot of data -- has
24 any finger been pointed at a particular plant operation
25 or a series of plant operations. Rather, the long-term
26 declines in fisheries production on the Atlantic Coast
27 have taken place because of over-fishing by the

1 commercial fishing industry. You cannot measure that
2 fine a point to say that it was caused by plant
3 operations, albeit -- and I'm reminded of yesterday's
4 discussion -- we all, in part, are to blame. No one
5 should be immune from that.

6 So I think, before we point fingers, we ought
7 to be very careful of where the fault lies, and the
8 evidence today continues to support that over fishing
9 or bad fishing practices have been the principal cause
10 of declines of significance.

11 MR. ELDER: Others in regard to this
12 fundamental issue? Doug?

13 MR. DIXON: One of our efforts, one of our
14 major efforts at EPRI is to bring sound science to the
15 regulatory process and to see that, where technologies
16 are in place, that they have definitive benefit or
17 environmental benefits that will offset losses.

18 At times there are going to be gray areas and
19 there are going to be technologies that may be
20 suggested that may be very inexpensive without known
21 benefits, whether they actually will minimize the
22 impact. Those technologies may also introduce a whole
23 host of other problems. Cooling towers have been
24 placed as the holy grail to solving problems, but, as
25 John noted yesterday, there are a suite of problems
26 associated with cooling towers.

27 Environmental enhancements offer flexibility

1 in the process to provide definitive benefits to the
2 environment. The suggestion that hatchery-type
3 operations are of no benefit should be carefully made.
4 Hatchery operations must be defined properly, but there
5 have been definitive benefits. The entire stock of the
6 Susquehanna River American Shad population is the
7 result of hatchery population. We now have natural
8 fish returning to the Susquehanna River. The utilities
9 participated in that process.

10 In addition, striped bass in the Chesapeake
11 Bay, part of its restoration was supported by hatchery
12 stocks.

13 So the statement that hatchery programs have
14 no benefits isn't true.

15 Relative to the benefits associated with
16 other types of environmental enhancements, like
17 wetlands, I think it is important that, rather than
18 just make statements that those programs are failures,
19 that facts be provided to indicate whether or not that
20 is true rather than just making a blanket statement.

21 MR. ELDER: Rich?

22 MR. BOZEK: Yes. Probably by way of
23 repetition, that which was suggested on an
24 environmental enhancements, certainly members of EEI
25 agree that it is not something that should be applied
26 at all times in all places, obviously. As Doug said,
27 we think it is appropriate when it fits the need.

1 And, from a public policy point of view, I
2 guess I would just repeat that I think it offers two
3 main themes. One is the flexibility for the
4 stakeholders involved when that flexibility serves
5 those stakeholders. And the stakeholders are the
6 permittee, the regulated entity, and the community.
7 Two, it allows, in my view, the management of the
8 environment to surpass the mere words of the statute,
9 or maybe better said, get to some of the key points of
10 the statute again in my mind that a common goal can be
11 reached in a flexible manner of environmental
12 protection and restoration of the integrity of the
13 nation's waters.

14 MR. ELDER: Jim Wright?

15 MR. WRIGHT: The Tennessee Valley Authority,
16 which, as I pointed out yesterday is a resource
17 development agency, has only engaged ourselves in one
18 mitigation or enhancement or conservation project
19 related to 316(b). However, we feel that it is a --
20 when done properly, it is a win/win/win situation for
21 the regulated community, for the regulators, and for
22 the environment and all of its stakeholders.

23 We certainly think that it is a viable and
24 prudent mechanism for reducing or eliminating aquatic
25 environmental impact and restoring integrity of the
26 waters, which is the ultimate goal of this statute.

27 I emphasize again, as others have, it is not

1 a BTA, it is a mechanism for reducing or eliminating
2 aquatic impact.

3 And, just generically, not speaking about our
4 project, I would like to talk about the four elements
5 that I think often bring this into a win/win/win
6 situation.

7 One is that often these types of projects can
8 restore a wholeness to an ecosystem or watershed that a
9 technological project at a specific plant cannot do.

10 The second is that it often offers fishery
11 management flexibilities in terms of the entire fishery
12 in a watershed that a technology fix at a power plant
13 cannot.

14 Third, it precludes very often some less-
15 than-expected results from a technology which has
16 maintenance problems and design problems and breakdown
17 problems.

18 And, fourth, it can often produce benefits in
19 perpetuity for that watershed and for all its
20 stakeholders that go far beyond any projected life of
21 the power plant.

22 MR. ELDER: Others at the table? Theresa?

23 MS. HANCZOR: Jim just said that, regarding
24 these factors, that mitigation, enhancements, whatever
25 you want to call it, is not BTA. Again, I get back to
26 the language of the statute. "Cooling water intakes
27 shall reflect best technology available." And the

1 utilities are advocating a lot of flexibility, a lot of
2 voluntary measures, which raises problems of
3 enforcement, and there's not much wiggle room in the
4 statute. It requires BTA, and the BTA is technology,
5 not planning wetlands, not restocking fish.

6 MS. BULLEIT: Well, back to the statute. We
7 always come back to the statute, and it certainly is a
8 short but powerful section.

9 What the statute requires is --

10 MR. ELDER: It brings all of us together.

11 (Laughter.)

12 MS. BULLEIT: That's right. And we love
13 these meetings. We're begging to have more.

14 (Laughter.)

15 MS. BULLEIT: What the statute requires is
16 that the design, location, construction, and capacity
17 of the cooling water intake structure reflect the best
18 technology available for minimizing adverse
19 environmental impact. If there is no adverse
20 environmental impact, then what you have is, by
21 definition, BTA. And our contention is that the
22 appropriate thing to think about is, Will there be or
23 is there an adverse environmental impact?

24 If that impact has been ameliorated or dealt
25 with through an enhancement that is voluntarily offered
26 by but is, nevertheless, enforceable through the permit
27 once it is agreed upon by all the stakeholders -- I

1 mean, if it is going to be part of the permit, it is
2 going to be subject to notice and comment. People are
3 going to have to agree with it. If there's
4 disagreement, then that will be fully discussed through
5 the normal permitting process.

6 But the notion is, if there isn't an adverse
7 environmental impact because there either has been an
8 enhancement or there is an enhancement that is proposed
9 that has a discernible chance of success and for
10 addressing the measures that are causing the adversity
11 in the first place, then that should be a tool that the
12 agency can consider as part of the overall 316(b)
13 implementation process.

14 It isn't a technology. It isn't a cooling
15 water intake structure technology. And we agree, by
16 the way, that you have to look at the words of the
17 statute, and what we're looking at here is "cooling
18 water intake structures."

19 So if we want to be faithful to the literal
20 language of the statute, then we have to look at all
21 the words, and we agree with that. But we think that
22 the term "adverse environmental impact" gives you a way
23 of looking at these to discern whether there is an
24 adverse environmental impact.

25 MR. ELDER: Let me add a clarification. If I
26 understood your comment, if there was a hypothetical
27 flow chart, the mitigation or environmental enhancement

1 would play a very up-front role. Do you see it then
2 excluded from playing a back-end role?

3 MS. BULLEIT: I think that, in certain cases,
4 if the review of technologies suggests that there isn't
5 a clear winner, I mean in terms of performance or
6 cost/benefit, that might be a point at which you could
7 circle back to say, Is there something else that would
8 ameliorate adverse environmental impact? And that's
9 something that permittees have done.

10 I mean, this is not -- we're not plowing new
11 ground here. The Agency has, in fact, adopted exactly
12 this approach in actually implementing 316(b). There
13 are enhancement projects out there, including the one
14 that Theresa referred to, and this is exactly the legal
15 theory on which those were adopted and enforced.

16 MR. ELDER: Bill?

17 MR. SARBELLO: What I was going to say is
18 that we take the reverse approach and put mitigation in
19 at the back end, and how we do it is, again, it comes
20 down to the difference in view of adverse impact with
21 our approach. You know, we're saying that there is an
22 adverse impact immediately, and so we are working on
23 the technology first to have the best technology
24 available, but there are still impacts that will be
25 unmitigated, things that you can't avoid minimized, and
26 that's where mitigation comes into our mix of
27 consideration.

1 Usually it is a voluntary offer, but what we
2 are doing is at the permit decision level. You
3 essentially meet the standards of BTA first, but the
4 decision of should this permit be issued and with what
5 conditions, then we consider, you know, what else can
6 be done to make it less bad.

7 Again, every state has a different situation,
8 but under our statute we're required to pick the
9 alternative that avoids and minimizes adverse impacts
10 to the greatest extent practicable, consistent with
11 social, economic, and other considerations.

12 It's a mouthful, but it essentially gets down
13 to a balance, and that's where mitigation can come in
14 to help make the balance or tip the balance towards,
15 yes, the permit should be issued with the mitigation
16 condition to essentially derive more good for society
17 and for the environment.

18 So we put it in, but we use the -- we
19 backload it rather than front load it.

20 MR. ELDER: It seems there are a lot of hands
21 here. We'll come back to you.

22 MR. BAILEY: UWAG just sees a real
23 opportunity here to achieve what we believe is the real
24 goal of the act, and that is restoration of living
25 aquatic resources. And one of the examples I think, to
26 help put this in context, is circumstances in the
27 Chesapeake Bay where you have a very proactive and

1 aggressive stakeholder program in which you have all
2 the states on the water body cooperating along with
3 EPA, you have scientists from all the major academic
4 institutions located within the bay states, as well as
5 state natural resource managers and EPA, NOAA, and
6 other scientific organizations.

7 They've looked at what are the factors, major
8 factors that are limiting living resources in the
9 Chesapeake Bay. The overwhelming problem is nutrients
10 from agricultural runoff or municipal wastewater
11 treatment plants. Those are followed by a number of
12 other factors such as sediment loading, toxics,
13 obstructions to migratory fishes on waterways to spawn,
14 and so forth. Nowhere on the list is limitations as a
15 result of impingement or entrainment losses.

16 This is not because facilities have not
17 looked. In fact, Maryland has a very aggressive 316(b)
18 regulatory program, and, in addition to reviewing the
19 millions spent by the facilities located on the bay,
20 they did their own independent evaluations and reached
21 conclusions that in many cases given facilities were
22 not having an impact, although in some there were
23 impacts where some level of mitigation was required.

24 And I think the key here is, as we discussed
25 yesterday, there is a link in all three aspects of the
26 program -- adverse impacts, cost/benefit, that kind of
27 thing. It makes a lot more sense to use economic

1 resources wisely to get the maximum benefit, and we
2 believe enhancements have a real opportunity to use
3 resources that can address some of the issues that the
4 resource managers and scientists know are what are
5 limiting living resources, as opposed to spending large
6 sums of money to install cooling towers on every
7 facility, where that's not even on the radar screen in
8 the list of the top 10 or 15 issues as a limitation of
9 those resources.

10 So we see just a real opportunity for EPA to
11 be progressive in terms of maximizing benefits to
12 living resources that are perceived to be impacted, and
13 doing it in a cost-effective manner.

14 MR. ELDER: Theresa?

15 MS. HANCZOR: Three points.

16 Section 316(b) mandates that the specific
17 impacts of impingement and entrainment must be
18 addressed by best technology available. Now, if there
19 are any impacts left over that the BTA can't address,
20 then the utilities are welcome to do all the mitigation
21 they'd like.

22 And, finally, David spoke about cooling
23 towers. We feel that, as we stated yesterday, that BTA
24 may not -- may be addressed by options other than
25 cooling towers so long as they meet the performance
26 standard that cooling towers can guarantee. So if you
27 can come up with a suite of technologies that can reach

1 that 95 to 98 percent reduction in entrainment, then
2 that's fine.

3 MR. ELDER: Okay. Any -- Mary Ellen?

4 MS. NOBLE: We're also concerned about
5 possible -- more than possible, the probable loss of
6 the technology forcing aspect of the statute, that if
7 we go too rapidly toward mitigation/enhancements, I'm
8 not sure I'm comfortable with either term, that drive
9 is lost, and lost at a much faster rate than it has
10 been recently.

11 I'm interested in how folks around this table
12 will answer the question that gets asked of me by just
13 folks -- fisherman and people. They say, "Well, look
14 here. This project for enhancement is supposed to
15 create lots and lots more new larvae. Doesn't that
16 just mean we've got lots and lots more new larvae going
17 through the plant and being destroyed?"

18 So I sort of have this question in the back
19 of my mind that -- how do you reach minimization if you
20 increase the population at risk and increase the
21 absolute number of the organisms impacted thereby?

22 Perhaps you can argue you've got a great
23 good. On the other hand, I don't think you can, at the
24 same time, argue that you are minimizing.

25 MR. ELDER: Audience comments or questions?
26 Brad, would you like to follow up with this or anything
27 else so far?

1 MR. MAHANES: Well, I think we've pretty much
2 heard a good discussion, or at least an opening
3 discussion, on whether folks think that mitigation
4 should play a role. One thing I would like to get some
5 further comment on, if we could, is along the
6 presumption that -- and, again, this is simply just to
7 flesh out this particular train of thought. If
8 mitigation or enhancements or something like that is in
9 some way, shape, or form deployed, how should it be
10 deployed?

11 David spoke a little bit on this, but I'd be
12 interested to get more on this from other folks. How
13 should the enhancements or whatever the projects are be
14 monitored to ensure their efficacy?

15 MR. ELDER: Uh-huh. But isn't that point
16 kind of the third question?

17 MR. MAHANES: Right.

18 MR. ELDER: Well, if you're ready to go
19 there, that's fine.

20 MR. MAHANES: Yes, we are.

21 MR. ELDER: I was thinking it might be useful
22 to try to have Ed perhaps reiterate the NEPA construct
23 and see if there is -- I'm not here to try to mediate
24 this meeting, but see if there was any meeting of the
25 minds in terms of that hierarchy. Theresa, do you
26 object to that, or --

27 MS. HANCZOR: No.

1 MR. ELDER: Okay.

2 MR. RADLE: Well, the Council on
3 Environmental Quality -- and I don't know how that
4 tends to bind EPA in terms of your consideration, but I
5 would think you'd have to give this some weight.

6 At any rate, the five steps are: to avoid
7 the impact altogether, to minimize the impact by
8 limiting the degree or magnitude of the action, to
9 rectify the impact by repairing, rehabilitating, and
10 restoring the effected environment, reducing or
11 eliminating the impact over time, and compensating for
12 the impact by replacing or providing substitute
13 resources or environments.

14 So I think what we've just discussed and I
15 think Bill articulated, that's really the last thing in
16 our process.

17 Maybe just while I have the mic a couple
18 thoughts.

19 The third question here, how to demonstrate,
20 you know, the effectiveness, our utilities in New York
21 suggested or have suggested from time to time that, you
22 know, some compensatory or, you know, what you call
23 mitigation. We've always been troubled about how to
24 really measure and know what we're getting to, so I'm
25 very interested in that.

26 One of the problems, though, with when you
27 try to mitigate entrainment and impingement through

1 these off-site things, entrainment and impingement
2 generally affect a wide range of species. You've got
3 the whole ecosystem exposed to entrainment and
4 impingement, and most mitigative strategies would
5 benefit a sub-set, or often would benefit a sub-set.

6 A hatchery, for example, doesn't stock the
7 107 species that are affected by entrainment, it stocks
8 one or two. So, in a sense, you're putting -- you're
9 taking away, you know, from the whole ecosystem, but
10 you're putting back a little bit here and maybe a
11 little bit there.

12 The same with marsh restoration or
13 establishing marshes. You're affecting this group of
14 fish through entrainment and impingement, but the marsh
15 and, you know, motherhood and apple pie, sure, glad to
16 have more wetlands in the system, but that isn't
17 necessarily going to have a positive effect on the
18 fishes that are many times affected by the plants, so
19 you can -- you know, you do this action, but you're not
20 necessarily, you know, helping all the fishes that
21 you're affecting at the plant.

22 And I guess a question. Doug, you mentioned
23 that the -- you had a hatchery and you felt that the
24 striped bass return to Chesapeake Bay was, in part, as
25 a result of the hatchery operation. Do you know --

26 MR. DIXON: Part.

27 MR. RADLE: Pardon?

1 MR. DIXON: Part.

2 MR. RADLE: What part? I thought Doug had
3 Said American shad.

4 MR. DIXON: I cited American shad and striped
5 bass.

6 MR. RADLE: I think you indicated striped
7 bass were stocked. I guess I'm just curious. What
8 part of the restoration did that play, what percentage?

9 MR. DIXON: I don't have the numbers, but on
10 certain systems the supplementation of striped bass was
11 actually near 100 percent on certain of the systems
12 where they were finding absolutely no juvenile striped
13 bass.

14 MR. RADLE: Okay. Well, okay, that's pretty,
15 you know, astounding that if no fish are there and you
16 put some in there you've increased it by 100 percent.

17 In a system like the Chesapeake, though, I
18 would think it is pretty challenging to add enough
19 fish. Without getting into specifics, a fairly
20 substantial effort in New York State resulted in a one
21 to two percent increase in one fish, the one-fish
22 species, you know, of the hatchery, and that was a very
23 substantial effort, and it left the other 106 species
24 affected by the plants untouched.

25 So I just bring that, you know, as -- it
26 doesn't solve all the problems.

27 MR. DIXON: I will agree with what he's

1 saying, and that's why I said "in part." It was a
2 small part, striped bass, but relative to American shad
3 in the Susquehanna it was major.

4 MR. ELDER: Okay. First David, and then, if
5 I remember right, the name is Winifred.

6 MR. BAILEY: I'd like to speak to two of your
7 points, Ed.

8 First of all, in terms of the diversity of
9 species impinged, I mean, you're exactly right. In
10 most cases you're going to pull in a wide variety of
11 species, but at least in all the facilities I've looked
12 at the real issue of adverse impact generally boiled
13 down to one to a few species that were really seen as
14 being affected. It wasn't the whole suite. Some --
15 you know, you got them in small numbers, but they were
16 not considered to be significant in terms of presenting
17 a problem to the population.

18 The second point I would like to make is my
19 company was actually engaged in an enhancement project
20 on the Patuxent River Estuary in the Chesapeake Bay,
21 and, in terms of our production, we were required to
22 put magnetically-encoded wire tags into every fish, and
23 in the Chesapeake Bay there's a striped bass juvenile
24 index program where, for decades, fish have been
25 monitored to track the success of year classes of
26 striped bass populations.

27 And what was found in the Patuxent Estuary

1 was, when the state went out, after we began doing the
2 stocking program, and checking the number of
3 magnetically-encoded, tagged fish, 50 percent of the
4 fish they were catching had the magnetically-coded wire
5 tags, indicating that we were matching natural
6 production in the Patuxent Estuary.

7 And, you know, in that circumstance, during
8 the course of the program, we're at, like, 3.75 million
9 juvenile fish being placed, and I think you'd find the
10 State of Maryland would agree with us, it has made a
11 very substantial difference in terms of the success in
12 the Patuxent River.

13 MR. RADLE: Can you tell me when the look for
14 tags occurred relative to the stocking?

15 MR. BAILEY: Well, they began the very first
16 year after we did it, and they found that pattern for
17 --

18 MR. RADLE: First year after? Are you
19 telling me that they stocked fish in 1997 and looked
20 for the tagged fish in 1998, or stocked in '97 and
21 looked in '97?

22 I'm asking you whether or not you provided an
23 opportunity for the tagged fish to mix thoroughly with
24 the population before you began to look for them.

25 MR. BAILEY: Yes, that's correct. Jules?

26 MR. ELDER: Go ahead. Please introduce
27 yourself, too.

1 MR. LOOS: My name is Jules Loos, and I also
2 work for the Potomac Electric Power Company.

3 For the young of the year fish, I guess the
4 percentages were probably more on the order of, say, 30
5 percent to, on the high side, 50. One year we did
6 reach, I think, 50 percent for just young of the year
7 after they had been thoroughly mixed.

8 For fish --

9 MR. RADLE: I'm sorry. You provided a period
10 of time for the stocked fish to mix --

11 MR. LOOS: Yeah.

12 MR. RADLE: -- with the existing fish? How
13 long?

14 MR. LOOS: The -- I think that was several
15 months. But then --

16 MR. RADLE: I would question whether that's
17 adequate, but --

18 MR. LOOS: But, no, I think more to the point
19 though is that for returning fish returning to spawn
20 the percentages were more on the order of 10 percent.

21 MR. RADLE: Uh-huh. That's impressive, and
22 it probably reflects the numbers of fish you put in and
23 the size of the population you're dealing with.

24 MR. LOOS: Yeah. There is some mixing. The
25 fish are not thoroughly -- they don't always return to
26 the same river in which they are spawned. And so, in
27 other words, some of the fish returning to the Patuxent

1 could have been from other sources in the Chesapeake
2 Bay.

3 MR. RADLE: And your stocked fish could have
4 gone elsewhere, as well. I understand.

5 MR. LOOS: That's right. And stocked fish
6 ended up quite widely dispersed in the bay and also in
7 other areas.

8 MR. ELDER: Jules, you're assuming they ended
9 up elsewhere, or --

10 MR. LOOS: They were captured elsewhere.

11 MR. ELDER: Captured. All right. Winifred,
12 and then Bill Gordon.

13 MS. PERKINS: I just wanted to go back to
14 your comment for a minute, Ed, regarding mitigation,
15 sort of the framework of mitigation.

16 I think UWAG would agree that you first try
17 to avoid the impact. I think it is also important,
18 though, that we all understand that we're talking about
19 approximately a thousand existing power plants that the
20 EPA has identified that may be subject to this rule-
21 making, and when you have an existing power plant you
22 don't necessarily have the same flexibility that you do
23 when you're designing new power plants.

24 So I think it is important, as we look at
25 mitigation or environment enhancement as an option for
26 minimizing impact, we recognize the limitations and the
27 confines under which over a thousand power plants may

1 be subjected and recognize that it is necessary in new
2 plants and it's much easier in new plants to avoid or
3 minimize or go through that systematic process that Ed
4 alluded to earlier. But with existing plants you don't
5 have that luxury. I just bring that up because it's a
6 point I think is important.

7 MR. ELDER: Bill Gordon, and then Brent will
8 be after that.

9 MR. GORDON: A couple of points. I think
10 that it is almost mandatory that there be a
11 prerequisite for a long-term management strategy here
12 involving pre-project, concurrent, and post-project
13 monitoring over a long enough period of time to clearly
14 demonstrate that the project has been successful or
15 unsuccessful.

16 If it's unsuccessful, then at the next
17 generation of re-licensing, certainly those
18 deficiencies can be addressed. And certainly included
19 in that must be a clear definition of performance
20 criteria, you know -- what are you going to measure and
21 when and how often and so on?

22 The other point was, you know, people talk
23 about hatcheries. I think we tend to forget that we
24 have a number of species of fish, some good, some bad,
25 that were brought from Europe, some accidentally, some
26 deliberate.

27 And brown trout, for example, has become the

1 backbone of many recreational fisheries throughout cold
2 water, and they were not native to North America.

3 We took striped bass to San Francisco Bay,
4 and it has been a very successful transplant.

5 We also brought the European carp here, much
6 to the dismay of present fish managers.

7 So there has been a wide range of good and
8 bad as a result of hatchery operations.

9 And if we look at wetland restorations, there
10 are many projects that have been successful -- Tampa
11 Bay, San Francisco Bay, and other places. And without
12 investments of the private sector, many of those would
13 not have happened.

14 So I think we have to look broader. Wetlands
15 carry out many more functions than just supporting fish
16 populations. The focus and the concerns often are
17 around fish and shellfish production. We tend to
18 ignore the other benefits.

19 We also tend to forget that wetland
20 restorations in most instances are permanent. They
21 will outlast the plants by many generations.

22 So I think we have to look at both the short
23 term and the longer term to begin to understand the
24 role that mitigation enhancement can play as a national
25 strategy for improving the quality of our waters.

26 MR. ELDER: First Brent, and then Mary Ellen.
27 Brent, would you re-identify yourself, please?

1 MR. BRANDENBURG: Yes. I'm Brent
2 Brandenburg. I'm with Con Edison.

3 Jim, Theresa's point is well taken that
4 enhancements, if included in a comprehensive 316(b)
5 package that would be contemplated by the agency cannot
6 be used as a rationale for failure to requiring BTA. I
7 think that's an excellent point, and that is, indeed,
8 not what is being proposed.

9 Rather, the way that voluntarily-offered
10 enhancements intersect with the BTA requirements is by
11 lowering the threshold of AEI, a point that Kristy and
12 others have made. It may require forbearance by the
13 Agency or by the permit writer from one permit cycle to
14 another to allow the accrual of the enhancements and to
15 confirm their existence, but if the presence of an
16 adverse environmental impact associated with a water
17 withdrawer can be diminished by the application of some
18 sort of an enhancement program, that merely diminishes
19 the requirements for BTA.

20 I think there is a useful analogy here to
21 another major controversy under the Clean Water Act
22 that I know the Agency has grappled with for years, and
23 that is the point source versus the nonpoint source
24 controls.

25 As the Agency knows better than any of us,
26 Congress, in its wisdom, gave much greater controls
27 over point source discharges under the Clean Water Act

1 to the Agency than it did nonpoint source. And we see
2 today an anomalous circumstance recognized by the
3 environmental community to be sure, where meritorious
4 opportunities to diminish nonpoint source pollution are
5 going fallow because of lack of statutory ability.

6 What we have here is a situation in which the
7 regulated community is proposing a situation of
8 volunteerism, where they would offer an
9 impingement/entrainment equivalent, if you will, of
10 nonpoint source reductions, and by doing so they
11 diminish the need for, in many instances, very
12 expensive, very difficult to implement and possibly
13 technologically limiting point source controls.

14 So by the beneficial application of an
15 enhancement program, there would be -- assuming, again,
16 if the enhancement program doesn't work, then we're
17 back to the requirements of technology that Theresa has
18 pointed to.

19 But if, indeed, the enhancement program
20 reduces the contribution of the facility to the
21 presence of adverse environmental impact, there will be
22 less demands upon the technological component under the
23 BTA.

24 MR. ELDER: Mary Ellen?

25 MS. NOBLE: A couple of times people have
26 mentioned the life of the plant. In some cases, we're,
27 you know, talking about plants where maybe there are

1 10, 30, 40 years permitting cycle, could be a good deal
2 shorter.

3 However, it seems to me that until we have a
4 strong fix on a generation system that does not rely on
5 cooling at all, that these sites will continue to be
6 used to acquire cooling water, whether it is within the
7 life of that plant or that permit.

8 So when you're talking about actions that
9 benefit beyond the life of the plant, I think you have
10 to make that caveat.

11 I wonder if I could take this opportunity --
12 and I apologize if this is something that was covered
13 the other day, and it is really a point of personal
14 curiosity, and I'm going to take advantage of having so
15 many experts in the room to ask this question, and
16 perhaps someone will be able to enlighten me right
17 after the end.

18 I've often wondered whether a BTA might
19 consist of distancing the chum plume from the intake.
20 After all, the heated water coming out is not just
21 heated water; it's an awful lot of food in a much
22 debilitated condition, not ready to run and hide.

23 So I'm wondering whether piping that away, a
24 good deal further away from our intakes than we do now,
25 might be a BTA to be looked at.

26 I appreciate anybody who can tell me I'm
27 crazy for thinking that, coming and telling me why,

1 because it seems like a real simple idea, and maybe it
2 is too simple.

3 MR. ELDER: Okay. Kristy?

4 MS. BULLEIT: I think that's a really
5 interesting idea. I don't think I would always agree
6 that it is a chum plume, but there might be situations
7 where that were the case, and it is precisely the
8 narrow adherence to the notion that you always have to
9 have BTA for the cooling water intake structure that
10 might prevent somebody from actually thinking about
11 that as a strategy.

12 That might very well be an enhancement that
13 one could consider in terms of ameliorating adverse
14 environmental impact, that if you assume that you
15 always have to stick a widget on the intake structure
16 in order to deal with the issue, then you don't get to
17 look at those kinds of creative solutions. That might
18 be something, though, that someone could offer up.

19 MR. ELDER: First Doug, if you still want to
20 make a comment, and then Winifred.

21 MR. DIXON: I wanted to follow on to a
22 comment that you made earlier about some of the
23 benefits of various types of enhancement projects that
24 they go on in perpetuity in the future, and there's
25 also a tremendous amount of spin-offs.

26 We've spoken a little bit about hatcheries.
27 I don't mean to focus on that, because there are many

1 other types of valuable enhancements, but, with regards
2 to a hatchery-type operation, they demonstrate some of
3 the spin-offs in science that can be derived.

4 The State of Virginia, along with the States
5 of Maryland and Pennsylvania, are engaged in rebuilding
6 the American shad stocks. They are currently planting
7 American shad, marked American shad larvae, into the
8 Pomonkey River in Virginia.

9 I was involved in this research directly. I
10 know that in 1995 the planted American shad comprised
11 4.5 percent of the juveniles. In 1996 it comprised 7.4
12 percent of the juveniles. In 1997, 3.8 percent of the
13 juveniles.

14 The larvae was stocked when they were six
15 days old. They were recaptured between the ages of 27
16 days old and 95 days old, more than enough time to mix.

17 But the most important thing about this is
18 that, as a result of marking the fish and monitoring
19 their contribution to the wild population, we now have
20 information which we never had before about the
21 movement of American shad juvenile fish and larvae. It
22 was always assumed that at the fish -- they hatch from
23 their eggs and they drift downstream. That, in fact,
24 is false. We've now found that the fish moved as far
25 as 16 miles upstream, and possibly a heck of a lot
26 farther than that. Our sampling gear was limited to
27 going no farther upstream than a certain point.

1 So there was a definite benefit to science
2 regarding an enhancement program.

3 MR. ELDER: Can you state the name of the
4 river again?

5 MR. DIXON: The Pomonkey River in Virginia.

6 MR. ELDER: Pomonkey?

7 MR. DIXON: Pomonkey. Uh-huh.

8 MR. ELDER: Okay.

9 MR. DIXON: It's part of the York River
10 System.

11 MR. ELDER: Okay. Winifred?

12 MS. PERKINS: I just wanted to clarify Mary
13 Ellen's point talking from the utility perspective.

14 Most power companies, in the design of their
15 intake and discharge system, very clearly try and
16 attempt that water coming out of the power plant isn't
17 then recirculated back into the power plant. That's
18 just purely from an efficiency point of view.

19 Now, if there are other considerations, for
20 example, with regard to the environmental effects or
21 entrainment and impingement issues, that's a separate
22 issue, but just the inherent good design of a power
23 plant would generally try to minimize any
24 recirculation.

25 I just wanted to be sure Mary Ellen
26 understood that.

27 MS. NOBLE: Yes. Well, I wasn't necessarily

1 talking about recirculating the same water. And I
2 understand the temperature logic.

3 MR. ELDER: Okay. Bill?

4 MR. SARBELLO: Just a few thoughts. One
5 caution in that, in terms of considering mitigation
6 projects, some people have said that these will go on
7 in perpetuity. I think you have to be careful with
8 that.

9 Certain types of projects, if you're creating
10 habitat, have the potential to go on in perpetuity, but
11 some of them also require a considerable effort of
12 maintenance. Certain wetland restoration projects have
13 been extremely successful, and others have failed
14 because of failure to maintain them. So, just in terms
15 of habitat restoration that can't be assured, there has
16 to be a mechanism to assure that the benefits continue.

17 For hatcheries, in terms of continuing
18 benefits, that has been kind of a checkered history,
19 where some of the Pacific coast hatcheries that were
20 built to offset the impacts of hydro power, once budget
21 cuts started happening, they were one of things that
22 were cut or reduced.

23 So especially something that's very capital
24 intensive, you have to make sure that the mechanism is
25 there to continue the benefits.

26 To get back to the question of how do you
27 measure these things, I think that you need to have a

1 clearly-articulated goal in terms of what the
2 mitigation measure is going to do. You know, what is
3 it going to substitute for? What is the nexus relating
4 to the power plant that you're trying to replace or
5 substitute for?

6 And then see it measure whether it is meeting
7 that goal, if it is a certain production level or a
8 certain effect in the population. So there should be a
9 clear plan in terms of what is intended to be produced
10 and how you are going to measure that and how you are
11 going to have assurance through time that it is still
12 producing what you intend.

13 And, just to put one more plug back in for
14 the concept of in-kind and out-of-kind, just when
15 you're developing the mitigation plant, just be clear
16 what you're doing. Are you -- will the project
17 replace, in kind, a certain fish species that is
18 perhaps being killed by the plant, or are you doing
19 something that is completely out of kind?

20 It may be perfectly beneficial. It may be
21 something that people would desire to do. But just be
22 clear in terms of what you are replacing. If you're
23 doing oranges for apples, identify that. It may be
24 that oranges are desired, but just identify what you're
25 doing and be very clear about the goals.

26 MALE VOICE: Can I clarify something?

27 MR. ELDER: Just a second.

1 Bill has to help me here segue from, you
2 know, what role mitigation should play, if any, to, if
3 you assume that the mitigation is part of the picture,
4 how should it be assessed. What type of demonstration
5 should the facility have to make to measure its value?
6 So unless you wanted to amplify on that, we'll just
7 launch into this discussion.

8 MALE VOICE: That's fine.

9 MR. ELDER: I'm not sure who was first.
10 There were a couple of hands. We'll go with Dave first
11 and then Ed.

12 MR. BAILEY: Okay. I would agree very much
13 with the way Bill described the process in terms of
14 establishing goals, making clear what your objectives
15 are, and monitoring to ensure those are achieved are
16 all very reasonable principles that we would agree
17 with.

18 I do think -- and I think Bill kind of
19 implied this, too -- we should consider very broadly
20 our opportunities to take advantage of different types
21 of enhancement measures, and therefore I think it would
22 be difficult to come up with some stringent
23 prescriptive way to handle that, because that would
24 limit what the opportunities are to go about developing
25 enhancement measures, and I think that's where folks
26 have been very creative and we've seen some of the
27 greatest benefits is when there is a lot of flexibility

1 along those lines.

2 MR. ELDER: Ed?

3 MR. RADLE: Just maybe to respond quickly to
4 two points.

5 In terms of your possible attraction of fish
6 to the discharge, at least in New York State there is
7 no evidence that fish are drawn to the feeding area
8 created by the discharge of the plant, or the potential
9 feeding area, so we don't have any indication that fish
10 are drawn to any of the plants' discharges. So at
11 least, you know, that helps from there.

12 MR. ELDER: But we did have the reference to
13 the manatees yesterday.

14 MR. RADLE: The thermal discharge.

15 MR. ELDER: Thermal discharge.

16 MR. RADLE: That's a -- yeah, we don't have a
17 lot of manatee problem in New York.

18 (Laughter.)

19 MR. RADLE: And, with respect to your comment
20 on the new plants and older plants and the different
21 standards, that's accommodated for in our balancing,
22 the cost for a new plant to install closed-cycle
23 cooling, for example, would be relatively modest
24 compared to retrofitting, and that -- in the Hudson
25 River, if I can use an example, a new plant proposed
26 without closed-cycle cooling would be looked at in one
27 respect, where a decision to require closed-cycle

1 cooling at an existing plant that were well through its
2 life cycle requires -- is a much harder decision.

3 So we do differentiate based on the age of
4 the plants.

5 Thank you.

6 MR. ELDER: Yes, sir? Please identify
7 yourself.

8 MR. LANGFORD: My name is Richard Langford
9 with Celanese Acetate. We're a member of the Chemical
10 Manufacturers Association.

11 We have a small plant with relatively small
12 discharge compared to utilities, but we have -- there's
13 very clear evidence that we have attraction of fish to
14 our thermal discharge. That is, when you go out there
15 during many times of the year, that's where all the
16 fishermen are, in fact, is right at the thermal
17 discharge, particularly during the very cold times of
18 the year. So, in fact, we have seen very high levels
19 of fish drawn in there, attracted to that area during
20 certain times of the year. In fact, it is a favorite
21 fishing place for many fishermen on the river.

22 MR. ELDER: What state?

23 MR. LANGFORD: It's in Virginia.

24 MR. ELDER: Okay. Theresa next?

25 MS. HANCZOR: Yes. A few things.

26 In response to what Dave Bailey was saying
27 before about the flexibility that enhancements provide,

1 I have a question. What about the need for uniformity
2 and some sort of national standards, national
3 regulations so we can get away from the problems that
4 the state authorities have been having in determining
5 what is BTA? That's one point.

6 The second point goes back to a previous
7 comment about the thousand existing power plants that
8 would need to retrofit and how expensive it would be.

9 Well, if it is so expensive, I ask whose
10 burden is that. In the rest of the economy, when
11 industries, facilities become obsolete in that they
12 cannot comply with standards, then, unfortunately, they
13 don't make it, they have to shut down. And I just
14 think there's an obligation that the utilities have
15 failed to do, and that is to do the research and
16 development, push technology forward, do what that
17 statute says, and I hope that the utility -- that the
18 EPA does not remove this obligation that the utilities
19 have to force technology.

20 And I remind you that Section 316(b) was
21 enacted over 26 years ago, and basically I wonder and
22 the members of Riverkeeper wonder where is the moral
23 backbone to do the right thing in terms of the
24 environment and in terms of society.

25 I find that this whole discussion misses the
26 mark. If the EPA goes along with what the utilities
27 have been advocating for years and are advocating

1 today, they're basically saying, "Go ahead. Kill as
2 many fish as you want. But if you plant some wetlands
3 you might have some happier fish." And I think that's
4 a complete abdication of your responsibility under the
5 act.

6 MR. ELDER: Doug?

7 MR. DIXON: Just with regards to the failure
8 to address technologies and things, the list that was
9 placed yesterday of all the different technologies
10 regarding all the different types of screens,
11 operational practice, et cetera, almost all those
12 practices were developed by the electric utility
13 industry entirely.

14 Next year we will spend approximately \$3
15 million related to impingement/entrainment issues, as
16 coming from our members on direct research on this very
17 issue. That's just next year.

18 Over the period of years, the utilities have
19 made a tremendous contribution to our knowledge,
20 scientific knowledge regarding the life history of fish
21 and methods to protect them.

22 So the statement that there's a failure of
23 non-obligation is a bit capricious.

24 MR. ELDER: Okay. David?

25 MR. BAILEY: One thing I thought I'd clarify
26 a little bit, too, is the idea of attraction of fish to
27 thermal discharges. And I think it is true on some

1 cases on a seasonal basis there are species that can be
2 attracted, but another part of the phenomenon is that
3 fish, once water temperatures fall below a certain
4 threshold, stop feeding for the winter, and what you
5 have oftentimes is fishermen being attracted to the
6 discharge canal because the temperatures where fish
7 will continue to feed will be a longer period than it
8 would in the river, so it oftentimes has as much to do
9 with the fact that you have a higher temperature
10 threshold than there's actually much higher
11 concentration of fish in that particular area.

12 And also, to clarify that, you know, clearly
13 utilities are not asking for any kind of blanket
14 threshold to be able to kill fish at will. As we've
15 stated, we believe that is definitely not our position.
16 What we do want to see, though, is that there be an
17 adverse impact, and in terms of enhancement, the
18 opportunity is to provide flexibility so that we can
19 maximize the benefit to the living resources that are
20 potentially affected to do the most for the water
21 bodies on which the facilities are located, rather than
22 engage in expending large amounts of resources which
23 potentially could produce substantially less benefits.

24 MR. ELDER: Theresa?

25 MS. HANCZOR: Well, as I said before, the
26 utilities can do both. You can employ BTA, as the act
27 mandates, and you could go ahead and do your

1 enhancement programs. Why not?

2 MR. ELDER: Bill Gordon?

3 MR. GORDON: This is a little off the
4 subject, but I would point out that in some instances
5 there has been collaboration between the power
6 companies and nearby aquaculture facilities where
7 they're using that thermal benefit to enhance fish
8 production. So it isn't all bad, you know, in that
9 respect.

10 There's a number of activities in the Gulf of
11 Mexico where the thermal waters are being used to
12 temper the wild swings that frequently occur in shallow
13 estuaries, and they benefit substantially. And this
14 was not required. It was done by the organizations
15 there. The power companies and the private sector
16 voluntarily moved in this direction.

17 MR. ELDER: Okay. Mary Ellen?

18 MS. NOBLE: Several people seem to have taken
19 my question to have to do with fish attraction. I'm
20 staying with entrainment. I'm staying with very small
21 organisms. So that's the question I have out there for
22 people.

23 And this question about what information
24 should the applicant be required to provide the
25 effectiveness of mitigation, always assuming -- and I
26 don't agree that this is the way we need to go, but, to
27 go back to this idea of how do you minimize, if,

1 indeed, whatever you do provides a richer life soup,
2 then perhaps you would end up demonstrating the
3 effectiveness of some operation by showing that you're
4 destroying more organisms.

5 MR. ELDER: Okay.

6 Let me ask some of these questions in a
7 little bit different way.

8 In terms of the first one, about what I would
9 call kind of the, you know, pre-permit showing, I'd
10 like people to talk about, you know, Is a pilot study
11 required? What other type of demonstration would be
12 acceptable or has worked in the past for people, as
13 opposed to measuring how well it is working in
14 practice?

15 Anybody want to touch that one? LeRoy or Ed,
16 Bill? A utility representative? Dave?

17 FEMALE VOICE: I defer to Dave.

18 MR. BAILEY: Okay. Again, what I would
19 suggest is the need for something like a pilot study
20 would probably be related to the degree of uncertainty
21 about the achievability of the proposed enhancement
22 project and its ability to offset or compensate for the
23 affected species or benefit to the fishery.

24 And so, again, what we think will maximize
25 the benefit to the resource is to allow a lot of
26 flexibility or opportunities to engage in different
27 enhancement projects because the needs in different

1 water bodies can vary so widely. I mean, that's
2 basically what the nation seems to be moving toward in
3 the watershed approach. Different watersheds have
4 different problems, and therefore the opportunities to
5 restore living resources is going to be water body or
6 watershed -- a watershed-specific basis.

7 And therefore, again, what I would say is, If
8 you're going with something that has a certain high
9 level of certainty in terms of its likelihood to be
10 successful, then you probably wouldn't need to do much
11 in terms of a pilot study where it could go more full
12 forward in terms of implementation; whereas, if you
13 were going to do something where there was less
14 certainty, then that is not an unreasonable thing, and
15 I think a facility would want to do it before spending
16 the economic resources to make the investment in doing
17 that kind of project.

18 MR. ELDER: So one possibility would be if
19 you had, hypothetically, two electric power plants in
20 the same ecosystem, and one had already employed an
21 enhancement project that was working, the results of
22 that project could demonstrate that a similar project
23 would work at the other facility in that same
24 ecosystem?

25 MR. BAILEY: Exactly.

26 MR. ELDER: Doug?

27 MR. DIXON: With regards to measuring, it is

1 difficult sometimes, after a project has been
2 installed, to actually measure whether, you know, it
3 has obtained its objective, and the problem there is,
4 of course, the environmental noise that confounds the
5 measurement.

6 As Bill noted in the last public meeting, it
7 is very difficult to tease out the impacts in the long
8 data set. It is similarly difficult to tease out the
9 benefits, and that is because of that environmental
10 noise that tends to mask those things.

11 However, projects can be designed, can be
12 competently designed, based on a number of scientific
13 principles and information that exists today, to attain
14 certain benefits. We should not lose those potential
15 benefits because of concern not to be able to measure
16 the actual benefits later on.

17 I think that is the failure that maybe
18 Theresa referred to earlier regarding some of the
19 projects on the Delaware River Basin. It's the
20 inability sometimes to measure the benefits.

21 Some of the benefits, however, are intuitive.
22 I mean, the restoration of wetlands has been a long-
23 term, is a national goal, and the amount of wetlands
24 that are being restored in the Delaware River is
25 tremendously impressive. And maybe because we can't go
26 out and directly measure those benefits in a
27 quantitative fashion should not, you know, deter from

1 the actual benefits that are there.

2 MR. ELDER: Okay. Theresa? Then Ed.

3 MS. HANCZOR: I just want to add that the
4 restoration of wetlands is a laudable goal, but it is
5 not the focus of Section 316(b). That's addressed in
6 other statutes. So we have to go back to the mandate
7 of 316(b), which deals with cooling water intake
8 structures, their specific impacts, and the technology
9 that is required BTA.

10 MR. ELDER: Ed?

11 MR. RADLE: I agree with you, Doug, in terms
12 of the difficulty of measuring those things. And, in
13 fact, that's why New York chose not to pursue, say,
14 some offers from our utilities to do those things
15 because we didn't feel comfortable that we had any way
16 of really quantifying the benefits relative to the
17 impacts, and we felt more comfortable with the measures
18 that we had of those impacts.

19 And I think your comments -- as you were
20 discussing, you know, there are benefits, even though
21 you can't measure. What was going through my mind is,
22 "Yeah, you kill some of my eggs and larvae, and then
23 there are impacts, even though I can't measure."

24 So the systems are difficult to assess and
25 monitor. When you're having impacts on a system as
26 large as the Chesapeake, the Hudson, the Delaware, it
27 is very difficult to tease out the impacts, just as it

1 is difficult to tease out the benefits.

2 And so I think the -- you know, part of what
3 you told me is you're agreeing that if you, you know,
4 kill "X" number of eggs and larvae, you can't see the
5 impact of that. It doesn't mean they aren't dead.

6 MR. ELDER: Bill and then LeRoy.

7 MR. SARBELLO: In terms of the question of
8 the demonstration, to give an example of an application
9 -- and people in this room who have been involved, jump
10 on me if I say something wrong. And it's very similar
11 to what you have here. Specific entrainment -- and
12 this is part of a settlement, so we were in a situation
13 where none of the parties would agree in terms of
14 definitions of impacts, et cetera. It all got put on
15 the shelf, and this was the settlement with a finite
16 term, and that is that one of the issues of concern was
17 entrainment, and the killing of striped bass,
18 specifically.

19 As an opportunity to test something, a
20 hatchery was built to try and stock striped bass to
21 replace some of the losses to entrainment to see if
22 this was a viable approach.

23 The evaluation scheme included goals for the
24 hatchery, in terms of how much production. It also
25 included marking the individuals with coded wire tags
26 so that it could be measured in terms of what
27 contribution they were providing to the population

1 instantly, and then over time.

2 It included such things as measuring tag
3 velocity to quantify how well your measurement was
4 working. Were you still getting, you know, other
5 biases coming in.

6 That would be the kind of -- and then
7 ultimately it was a decision as to whether or not this
8 is something that can substitute for the losses, and
9 the issue that has been raised multiple times is that,
10 okay, that's one species, what about all the other
11 ones.

12 And you have to put that in the context of,
13 if it's the only species getting killed, then that may
14 be great. If it's the preponderance, that may still be
15 okay. If it's not replacing all the losses, then maybe
16 it's not okay.

17 But essentially you can lay out a careful
18 study to decide -- will you -- what are you trying to
19 achieve, and are you achieving it, and is it good
20 enough. That's one way of looking at things.

21 I think that the other -- so that's specific
22 to this question.

23 The other larger question that's on the
24 table, again, is what is the role of mitigation that
25 people -- or compensation that people keep coming back
26 to, and I'm going to, I'm afraid, engage in some
27 hyperbole here, but maybe I can frame the question.

1 If you had a situation where someone was
2 polluting the river with a toxic discharge, would you
3 accept some other compensatory act that might be
4 perfectly laudable, like giving money to widows and
5 orphans, as a substitute for correcting the impact?

6 Obviously, that's extreme hyperbole. We're
7 not talking about something to that degree. But when
8 you come up with a context -- that's why I said you
9 have to have some sort of nexus between the impact that
10 you're having and what you're trying to correct by the
11 mitigation. You have to have that nexus and you have
12 to show that what is being proposed is directly related
13 to the impact that particular facility is causing.

14 MR. ELDER: All those in favor of widows and
15 orphans?

16 (Laughter.)

17 MR. ELDER: LeRoy?

18 MR. YOUNG: I think one of the things that
19 will be as difficult to determine as, you know, what
20 are the benefits to measure is, you know, how big of a
21 project or how many -- what should be undertaken by a
22 utility to mitigate?

23 You know, I haven't been involved in a whole
24 lot of these mitigation-type efforts. I've been
25 involved in some related to hydropower, and so forth,
26 and it is a real gray area as to, you know, what size
27 of project does the utility undertake to address a

1 certain problem?

2 Also, I think the EPA needs to recognize that
3 not all utilities, not all companies are going to
4 volunteer to do this work, and that needs to be thought
5 about.

6 We've run into situations where companies
7 will do absolutely nothing, and other situations
8 companies right up front want to do all they can to
9 voluntarily enhance the environment. So how that is
10 dealt with in an equitable fashion is going to be
11 difficult, I think, but something you should take into
12 consideration.

13 MR. ELDER: Doug?

14 MR. DIXON: Yeah. I just wanted to clarify a
15 couple of things regarding impacts.

16 New York State has made a decision that
17 entrainment and impingement is an adverse impact,
18 whether it is one fish or a million fish. They've made
19 that decision. That's a policy decision, and I will
20 not address policy decisions.

21 However, from a scientific point of view,
22 that is not necessarily an adverse impact. There was a
23 mention that maybe as much as 107 species of fish are
24 entrained, but that does not mean that 107 species of
25 fish are actually adversely impacted as a result of
26 that entrainment. As a matter of fact, I would contend
27 that probably a very few of them are impacted.

1 So when you have an environmental
2 enhancement, there has been discussion that it might
3 not address all the fish that are entrained. That's
4 from a policy point of view. From a scientific point
5 of view, a wetland restoration could very well benefit
6 more species than are adversely impacted by the intake
7 operation.

8 In addition, I was speaking before about, you
9 know, monitoring the benefits of the particular
10 enhancement project. Things like wetland restoration
11 is very difficult to do that. Other things are no-
12 brainers. When you -- if you remove a dam or if you
13 provide fish passage, you open up miles and miles of
14 fish habitat. That's very easy to measure.

15 The problem there becomes sometimes you can
16 put a fish ladder in place or you can actually remove
17 an obstruction, but you may not get back the species
18 for various other reasons that we don't know about. We
19 can do all kinds of things in the northeast to try to
20 restore Atlantic salmon, but they're fruitless, and
21 it's not simply because of some biological reason that
22 we might not understand.

23 But the goal is to open up the habitat.
24 That's very easily attained via a ladder or maybe a dam
25 removal, some kind of project like that. The habitat
26 has been created, it has obtained its objectives, and
27 we just have to cross our fingers that the fish return.

1 MR. ELDER: Okay. Kristy?

2 MS. BULLEIT: On the question of how do we
3 decide what the project should be and how do we decide
4 how to design it and to show that it will produce the
5 benefits we anticipate, I think that these decisions
6 have been in the past and will continue to be very
7 site-specific, and there is no substitute for that.
8 That's why it's not something that you can -- it's not
9 a widget of any kind. You can't just mandate it, say
10 that this is the suite that will work for all cases and
11 here is how it should be designed. It will be very
12 site-specific.

13 And I'd like to take the opportunity to
14 correct kind of a mis-impression. These things aren't
15 cheap, quick fixes that people slap down on the table
16 and walk away from. These things are very expensive,
17 and they're typically proffered in difficult cases
18 where there is genuine uncertainty or debate, and that
19 has to be addressed in a way that is satisfactory to
20 all sides and produces the greatest net benefit.

21 I guess the other thing I'd say -- and it
22 kind of is designed to create -- to address something
23 that we talked about yesterday, which is why do the
24 utilities care about the environment. How disingenuous
25 to suggest that industry might have an interest in the
26 environment.

27 I think these are exactly the kinds of

1 projects that demonstrate that utilities do want to
2 produce -- and other companies, other industries.
3 There are going to be a lot of industries affected by
4 this, and they all want to maximize net benefits, and
5 they don't want to create other kinds of environmental
6 problems for themselves or for society, at large.

7 So these are the kinds of projects that can
8 help to maximize net benefits for society, and they can
9 also help to minimize other kinds of problems that some
10 of these technologies create.

11 MR. ELDER: In the 15 minutes or so we have
12 left, I'd like to pursue two things. One is we've had
13 some identification of mitigation, if you think that
14 has some role. But we tend to keep talking about fish
15 hatcheries and wetlands, and Doug in his last comments
16 introduced fish ladders and dam removal.

17 Has anybody had any experience with anything
18 else besides those four examples? LeRoy?

19 MR. YOUNG: One of the biggest problems we
20 have in Pennsylvania is acid mine drainage, and we have
21 had numerous efforts in the state to develop programs
22 to clean up acid mine drainage that have been quite
23 successful, and where monies will go into a restricted
24 account for a certain watershed that then can be used
25 for various clean-up programs. So there is, you know,
26 a whole range of possibilities there.

27 MR. ELDER: Okay. But, back to -- Bill, I

1 think it was you that used one of EPA's favorite
2 vocabulary words, "nexus," you know, to what degree is
3 there a nexus between 316(b), in something like acid
4 mine drainage? I mean, yes, it's environmental
5 restoration, but the nexus is not the type --

6 BILL: Yeah. Well, the issue was raised
7 earlier about, you know, what is really the limiting
8 factor in this situation, and, while impingement may be
9 a serious problem or -- you know, if some effort could
10 be undertaken to benefit, to improve the water quality,
11 it would, you know, really benefit the resource above
12 and beyond anything done at the specific project, I
13 think we would be in favor of that. So, you know, I
14 think the wise allocation of the resources is a good
15 way to go.

16 MR. ELDER: Other comments? Questions?
17 Bill, and then the other Bill.

18 MR. SARBELLO: Yeah. Just to elaborate, I
19 may have inferred something I didn't mean to imply, and
20 that is that what I'm saying is that you need to say
21 what the nexus is. It may be completely appropriate to
22 build marshlands again to explain how it is going to
23 offset the impact of the particular power plant. If
24 it's going to increase production to a suite of
25 species, show that that's important to offsetting the
26 impact.

27 Or, again, if mitigating acid mine waste is

1 going to increase the productivity of the system to a
2 point where you will get a great expected gain in the
3 species than the net resulting loss of a species from
4 the power plant mortality plus the additional increment
5 that is killed in the river, you know, make the
6 demonstration and explain it so that anybody can
7 understand it on how the net effect is going to provide
8 benefits to increase the whole of what is going to be
9 achieved.

10 MR. ELDER: Bill Gordon?

11 MR. GORDON: A couple of points.

12 One, you talked about wetland creation and
13 the difficulty of evaluating their contribution. The
14 literature is full of documentation where the
15 functionality of the wetland is a fairly rapid thing.
16 It recolonizes with a mix of species, a diversity that
17 didn't exist there before.

18 The actual production contribution coming out
19 of that, the energy flow, is a little more difficult
20 and time-consuming to do, but it can be done and has
21 been done.

22 The question -- you asked the question, Are
23 there other examples of mitigation efforts that have
24 paid off? Yes -- eel grass bed restoration, mangrove
25 restoration, opening up high mountain ponds and
26 reservoirs and those sorts of things for production of
27 fish.

1 When you put in a fish ladder, if you are
2 planning on putting in a fish ladder, pre-plant the
3 juveniles upriver so you already have an established
4 population that out-migrates prior and is imprinted to
5 that system prior to the opening of the fish ladder, so
6 as they return as adults they are imprinted to that
7 system.

8 There is a whole range of things that has
9 been done, can be done, and a lot more could be done to
10 do that.

11 Back to your measurement, it costs money to
12 develop an adequate data set to demonstrate the
13 baseline over a long enough term prior to the
14 installation of a plant to know what your baseline is.
15 And, as was pointed out, there is an environmental
16 noise there, a species of fish fluctuating naturally
17 over a wide range of things, but you can establish a
18 reasonable baseline.

19 But no one plans that far ahead to do that
20 when you're building a new plant, and I would suggest
21 that many plants are stuck somewhere for an economic
22 situation rather than planned to be placed there from
23 an environmental standpoint.

24 So we do need, I think, a lot of pre-planning
25 concepts as new plants come online. Where is the most
26 appropriate place to place them to minimize their
27 implications on the environment?

1 And, as was pointed out yesterday, some
2 places it's great. They don't do much. They don't
3 suck in many organisms. But other places it is
4 probably a fairly rich diversity and they could have
5 minimized that implication by better plant placement.

6 It's certainly true on inland waters and, to
7 a large degree, on the marine end of it.

8 MR. ELDER: Okay. If there is no other
9 examples -- Theresa?

10 MS. HANCZOR: No. I just had a response to
11 something that Kristy said regarding that the decisions
12 historically on this issue have dealt with the problem
13 on a very site-specific basis. And the reason they
14 were dealt with on a site-specific basis was because
15 there was no regulations to guide those decisions.

16 Regulations are needed to provide that level
17 of guidance and uniformity, and by that I don't mean
18 that it is the same fix for every plant, the same
19 technology to comply with BTA, but performance
20 standards that would be national in basis and that
21 could be applied uniformly for the various plants.

22 MR. ELDER: Okay. In the last few minutes
23 I'd like to talk more about the follow-up effort.
24 There has been some talk about magnetic tagging, wire
25 tagging, which has been around forever. Are there
26 other techniques that people have experience with that
27 talk about the length of time involved? And should it

1 be for the entire permit term, or some shorter period?
2 Maybe some input on that.

3 Ed?

4 MR. RADLE: I guess if I were writing a
5 permit and it included something like this, I think I
6 would need the -- I would want the flexibility to take,
7 depending on the project -- and they're site-specific,
8 they're larger, they're smaller. They involve things
9 you would see relatively quickly, as in the tagging
10 program, or something that might be spread out over
11 years.

12 So I guess my recommendation to EPA would be
13 to include provisions that the project has to be
14 evaluated, and then let the scientists involved on both
15 sides, you know, figure out what that means, because it
16 is just such a wide range of things between the
17 environments and the projects, themselves.

18 I don't know that I could provide any
19 guidance in terms of, you know, other than you have to
20 take a look at what you've done and make sure that you
21 -- try to make sure that you're doing something, you
22 know, productive in that, you know, mitigation area.

23 MR. ELDER: Okay. Historically, I think most
24 people say it is a good idea to pin down -- to monitor,
25 in a general sense, when the authorization is given
26 instead of saying you'll figure it out later.

27 MR. RADLE: No. I'm sorry. I was suggesting

1 that EPA's regulations should require monitoring and
2 evaluation. The scientists involved in the project
3 will have to --

4 MR. ELDER: Okay.

5 MR. RADLE: -- negotiate and hunker down in
6 terms of, you know, just how long is it going to take
7 to see a response and what response variables would you
8 look for, and things like that.

9 MR. ELDER: Site-specific monitoring?

10 MR. RADLE: That's correct. Yeah.

11 MR. ELDER: Dave?

12 MR. BAILEY: I would say, again, I think to
13 maximize the benefit of this you'd think in terms of
14 flexibility, and therefore monitoring should be
15 appropriate to the nature of what the enhancement is,
16 and, you know, an example might range from you have an
17 impacted species of fish and you're going to compensate
18 for losses to an aquaculture program.

19 One decision might be that I'm going to do --
20 in that case, compensate on an annual basis for
21 whatever losses are, and therefore each year you're
22 going to -- you know, during the life of the project
23 you're going to have to do monitoring to say you're
24 achieving that goal.

25 In another case, an example might be you
26 decided to do a wetland project, and perhaps base it on
27 the net present value of the losses, so to speak, for

1 the life of the plant, and in which case you might up
2 front spend a much larger amount of money to do the
3 compensation, but at the end of it, as long as you
4 performed in terms of developing the appropriate number
5 of acres, and so forth, i.e., achieving the goal you
6 established in that case, then you might -- you know,
7 that might be it.

8 So, again, I would say there's a lot of
9 opportunities if there's flexibility to follow through
10 with them that would logically make sense, and I
11 believe be acceptable to regulators and stakeholders.

12 MR. ELDER: Okay. Other comments on that
13 question?

14 (No response.)

15 MR. ELDER: Okay. It would be a good time to
16 have our break. Why don't we take our scheduled break
17 now for 15 minutes, and we'll get back again on other
18 issues that we ought to be considering. Please help
19 yourself to the flow chart up here.

20 (Whereupon, there was a brief recess.)

21 MR. ELDER: We're working on an unmitigated
22 delay.

23 If you will agree with me, the staff has
24 prepared a summary of what has occurred at yesterday's
25 meeting, as well as today. The summary of today's
26 meeting is still being prepared as I speak, but we
27 coordinated our efforts, and they've assured me that by

1 the time I get done talking about costs they'll be
2 ready to give me the summary of mitigation. So I may
3 end up speaking a little bit slower than normal so that
4 will become a reality.

5 (Laughter.)

6 MR. ELDER: Let me start with technology
7 issues, but let me preface this by saying Deborah has
8 agreed to put these summaries on the EPA internet site,
9 so you do not have to, you know, become a master at
10 shorthand between now and, you know, the next 15
11 minutes.

12 MR. RADLE: Is the last meeting's summary on
13 there, or is that --

14 MS. NAGLE: No. That will go up there, as
15 well.

16 MR. RADLE: Okay.

17 MS. NAGLE: That did not go up there, but
18 under the 316(b) web site, the summary -- meaning the
19 summary that Jim Elder does, which is the very short
20 summary -- will go up on the -- underneath each of the
21 respective public meetings.

22 MR. RADLE: Okay. I was thinking of a more
23 comprehensive summary.

24 MS. NAGLE: Right. The transcripts, those
25 will eventually go up. We have some problems with the
26 June meeting one, but we're solving those, and as soon
27 as we fix them, then they'll go up on the internet that

1 you can pull those down, and the same thing once I get
2 the transcripts from this one complete. It will go up,
3 as well.

4 MR. RADLE: Okay. Thank you.

5 MR. ELDER: Okay. All right.

6 Let me start with the technology issues. And
7 I think I'll stop after this section to see if someone
8 feels strongly that I left something out.

9 Some suggested that closed-cycle cooling
10 should be added to EPA's list of potential BTA
11 technologies.

12 Some believed the capacity of cooling water
13 intake structures equates to the flow of the structure.
14 Cooling towers are one of the best means for reducing
15 intake flow; therefore, cooling towers should be
16 included as a potential BTA option.

17 It was noted by one that it does not make
18 sense to exclude cooling towers, since it is known that
19 their use provides a means to achieve the goals of
20 section 316(b), i.e., that of minimizing adverse
21 environmental impacts.

22 Most participants agreed that, in general, if
23 facilities were to restrict intake flow, they would
24 reduce environmental impact, especially from
25 entrainment at those intake structures.

26 Fourth, some noted that Congress gave EPA
27 authority to look at capacity factors; however, these

1 factors should only be taken into account by
2 technologies that can be implemented on cooling water
3 intake structures. EPA should not require operating
4 standards because the Agency has no authority to do so
5 under the statute.

6 Others disagreed with this point and
7 indicated that Congress did intend for capacity to be
8 one of the main factors evaluated for BTA
9 determinations.

10 It was noted that EPA has established some
11 precedence on this issue by indicating cooling towers
12 as BTA for some facilities, for example, some Hudson
13 River facilities.

14 Others believed that BTA should be decided on
15 a national basis, using an effluent guideline-like
16 approach for developing a performance standard. It was
17 noted that this approach would ensure uniform
18 standards.

19 Some believed that it does not make sense for
20 EPA to look at BTA on a national basis, because there
21 are too many site-specific factors that impact a
22 technology's design, performance, and cost.

23 It was also noted by some that site-specific
24 standards or case-by-case determinations were
25 appropriate because they would allow for better
26 environmental protection, as well as take into account
27 the site specificity of the issues.

1 Some commented on the need to categorize
2 types of sources based on factors such as "new" versus
3 "existing," and volume of flow and develop BTA on the
4 basis of these categories.

5 Examples included case-by-case BTA
6 determinations for existing sources and a performance
7 standard for newer sources.

8 Some thought that this new source performance
9 standard should be cooling towers because it is their
10 belief that most new facilities are implementing these
11 technologies and that a precedent has been set to
12 dramatically reduce intake flow and thus adverse
13 environmental impacts.

14 Some recommended that experimental
15 technologies not be implemented alone without other
16 "proven" controls to supplement them. Others cautioned
17 that EPA should not exclude the use of experimental
18 technologies. Such an action could be counter-
19 productive and discourage the innovation of more
20 efficient technologies.

21 Continuing with technologies, some stated
22 that successful technologies other than cooling towers
23 included Ristroph screens, wedge water screens, and
24 Johnson screens; however, it was pointed out that the
25 technologies implemented on cooling water intake
26 structures and on EPA's list of potential BTA options
27 reduce only impingement of later life stages and are

1 not effective in reducing entrainment of eggs and
2 larval stages.

3 It was noted that, at a plant on the Hudson
4 River, successful experimentation had ensued with a
5 porous dike in the shape of a boom to address
6 entrainment issues.

7 Further, some rejected the notion of using
8 impingement and entrainment counts as sole measures of
9 the efficacy of a technology's performance. For
10 example, our favorite buckets of fish. Others rejected
11 using population-based measures as a means to determine
12 technology efficacy, as such measurements are
13 difficult.

14 Some suggested using these two types of
15 measurements in combination, and that there had been a
16 precedent established under previous Section 316(b)
17 rule-making activities.

18 It was noted that NPDES permit terms of five
19 years would allow for the re-evaluation of technology
20 performance.

21 One commenter suggested that national
22 standards should allow for a variance similar to
23 fundamentally-different factors for effluence
24 standards. Others stated that the statutory language
25 of 316(b) did not provide for a variance.

26 Arguments stated against using cooling towers
27 and other technologies as a single prescriptive

1 technology included: energy penalties, other
2 environmental issues, reliability, and distribution.
3 It was noted that a single prescriptive technology
4 could affect competition, whereas others said that a
5 uniform standard was needed to create a level playing
6 field in the emerging energy market.

7 Some promoted a risk management approach to
8 determine those sites with the greatest risk of adverse
9 environmental impacts. It was suggested that, within
10 the context of site-specific determinations of BTA,
11 that the approach or decision criteria to be used in
12 making the determination be set and implemented
13 uniformly.

14 Some recommended that the flow reduction
15 achieved by cooling towers be used as the basis for a
16 national performance standard, using the reasoning that
17 flow reduction equates to impact reductions. Other
18 stated that a reduction standard of between 90 and 98
19 percent of flow could not be achieved by facilities
20 without substantial operational problems.

21 Is there anything that we either misconstrued
22 or left out? Theresa?

23 MS. HANCZOR: With regard to Ed's comments
24 about the boom that is now being employed at one
25 facility on the Hudson, we're still waiting for data on
26 that to determine the efficacy, and also whether or
27 not, on the outside of the boom, whether it is

1 impinging fish and actually causing some environmental
2 harm. So we're still waiting for the full evaluation
3 of that.

4 MR. ELDER: Dennis?

5 MR. DUNNING: Jim, you mentioned something
6 about EPA requiring cooling towers at a Hudson River
7 facility, or something like that?

8 MR. ELDER: The sentence was, "It was noted
9 that EPA has established some precedence on this issue
10 by indicating cooling towers as BTA for some
11 facilities, for example, some Hudson River facilities."

12 MR. DUNNING: I think, to the best of my
13 knowledge, EPA has never designated cooling towers as
14 BTA on the Hudson. It's my understanding the back in
15 the '70s EPA proposed permit conditions for thermal
16 performance of the plants that would lead one to
17 believe the only way you could meet those thermal
18 standards is to install cooling towers. But I don't
19 believe that EPA ever stipulated that cooling towers
20 had to be installed at a Hudson River plant.

21 MR. ELDER: You may be right. Can anybody
22 shed any light on that?

23 MR. RADLE: I believe that's accurate.

24 MR. ELDER: And was this before your state
25 had authorization for the NPDES program?

26 MR. RADLE: I'm sorry? Say that again?

27 MR. ELDER: Was the prior to EPA authorizing

1 New York State to administer the --

2 MR. RADLE: That's correct. It was in the
3 1975 permits that -- the first NPDES permits that EPA
4 issued, they required flow reductions, I believe, or --
5 Dennis is right. They limited the BTUs per hour that
6 could be discharged from the plants, and the only way
7 you could achieve that was through cooling towers, and
8 I think Dennis stated that correctly.

9 MR. ELDER: Okay.

10 MS. HANCZOR: Well, my recollection is that
11 the bottom line was that the EPA mandated that they be
12 retrofitted with closed cycle cooling.

13 MR. ELDER: Well, I'm sure -- I think EPA
14 will look into circumstances of that and phrase it
15 accurately.

16 MR. SARBELLO: My recollection -- I can't
17 find it in my notes, but I think it was Theresa's
18 comment that EPA had required cooling towers, then she
19 named a plant, but it wasn't on the Hudson River, but I
20 can't recall which one it was.

21 MR. ELDER: Charlie, can you add anything to
22 that?

23 MALE VOICE: My recollection is that, from a
24 permit-writer's standpoint, one cannot stipulate in a
25 permit a given technology unless such be the case that
26 the permittee has, in fact, requested or used that as
27 his alternative.

1 One can, within the permit, impose those
2 limits which impact would drive someone to put in
3 cooling towers, that it's a reduced flow and/or reduced
4 BTU limitation.

5 MR. ELDER: Okay. If there are no other
6 comments about that issue -- Jim?

7 MR. WRIGHT: I want to comment on what was
8 somewhere, Jim, probably within points one through
9 four, or at the very beginning.

10 You said that most agreed that reducing flow
11 would decrease impact, especially entrainment. I do
12 not think that's fair from what we heard yesterday.
13 Ned Taft testified that there was no relationship
14 between -- no direct relationship between impingement
15 and entrainment and flow, and Kent Zammit was able to
16 point out that while, with closed-cycle systems, you
17 essentially guarantee 100 percent mortality, such as
18 not the case with what these systems offer.

19 So we certainly recognize that in the list of
20 multiple factors at any site which can affect
21 impingement and entrainment impacts, flow is one of
22 them, but to say that most agreed that reducing flow
23 would be to decrease impact goes far beyond what we
24 agreed to.

25 MR. ELDER: Other comments on that issue?

26 MR. RADLE: I can provide empirical data that
27 will establish a direct relationship between flow and

1 numbers of organisms entrained in a plant, and I'd
2 welcome Ned Taft to provide data that indicates the
3 contrary, but that is well established, at least in the
4 estuarine systems in New York. The density of the
5 organisms doesn't change with the volume of flow, so as
6 you reduce the volume you reduce the numbers of
7 organisms in direct proportion.

8 MR. WRIGHT: But you don't directly reduce
9 impact, which is the issue at hand under the statute.
10 That's the point. We're not -- obviously, with the
11 planktonic organisms, the more volume you bring in, by
12 definition, the more organisms you bring in. The issue
13 is impact.

14 MR. ELDER: Doug, did you want to --

15 MR. DIXON: Yes. I would just add, relative
16 to that, is to agree that on a site-specific basis it's
17 very easy to find correlations, but as you go
18 nationally and you start looking at all the different
19 locations and impacts, those correlations just fall
20 apart.

21 MR. ELDER: Theresa?

22 MS. HANCZOR: I'd like to see -- if you have
23 the data on that and it's current, I would appreciate
24 if you could share it with us.

25 Getting back to what Jim said, the impact is
26 impingement and entrainment, and entrainment -- the
27 data that I have seen shows that the more water you

1 suck in, the more fish you kill.

2 MR. ELDER: Dennis?

3 MR. DUNNING: Okay. Related to this issue,
4 Libby Ford raised a point which may not have been clear
5 yesterday, and the point that she made relative to this
6 topic is that Section 316(a) of the Clean Water Act
7 specifically refers to populations of fish, shellfish,
8 and wildlife, yet 316(b) refers to environmental
9 impacts. And I believe the point that she was making
10 is that 316(b) should be viewed more broadly than to
11 assume that the environmental impacts are related only
12 to fish, shellfish, and wildlife.

13 Yesterday, the reference was made to
14 indigenous populations, where the regulation actually
15 says, "indigenous populations of fish, shellfish, and
16 wildlife."

17 MR. ELDER: Under (a)?

18 MR. DUNNING: Under (a), whereas that
19 language is not in 316(b), which would support some of
20 the discussion yesterday that impact should be viewed
21 more broadly than simply the number of fish, shellfish,
22 and wildlife.

23 MR. ELDER: Perhaps Libby would like to tell
24 us what she really thinks?

25 MS. FORD: Actually, it was just stated very
26 well. The other point I wanted to clarify early on
27 here, somebody's statement about setting a national

1 standard using the national effluent guidelines program
2 as a standard, and for setting a national standard for
3 intake structures.

4 I also pointed out that there are definite,
5 very distinct, different statutory languages which
6 drives the national effluent guidelines program, "BAT
7 economically achievable," as opposed to BTA that's tied
8 to adverse impact.

9 MR. ELDER: Yes. Would people be happy on
10 the third point about this reducing impact if we
11 changed the word "most" to "many"?

12 MALE VOICE: No. I think you need to say
13 that there are really two views on that topic and that
14 it's really open to discussion -- that there are two
15 different opinions on the topic.

16 MR. WRIGHT: I agree it's fair to say most or
17 all agree that it is a factor. It is a major
18 contributing factor.

19 MS. FORD: I think, as the discussion went
20 yesterday, the point that was made was that there, when
21 you reduce the flow, you'll reduce -- the temperature
22 goes up. And the increased temperature and other
23 factors causes an increase in mortality, and that's
24 really the environmental impact. It's not so much the
25 numbers entrained, but the numbers that come out. It's
26 the entrainment that are killed during the entrainment,
27 and the pass-through process.

1 That's an important distinction.

2 MALE VOICE: I think, if we want to keep it
3 short, some people feel there's a direct relationship
4 between reducing flow and reducing impacts; others feel
5 that there is no such relationship.

6 MR. ELDER: Okay. I think that's reasonable.
7 Other points on technology? Kristy?

8 MS. BULLEIT: Two points.

9 On the level playing field question, it was
10 pointed out that other believed that the level playing
11 field would be ensured by a consistent process and that
12 would be more appropriate.

13 Second, on the question of cooling water
14 intake structures and their relationship to cooling
15 towers, it was pointed out that cooling towers are part
16 of the cooling system, not part of the cooling water
17 intake structure, and that EPA has agreed to that in
18 previous formal opinions, that a cooling tower is not a
19 cooling water intake structure technology.

20 MR. ELDER: Theresa?

21 MS. HANCZOR: Do you have on the record that
22 others believe that cooling water intake structures,
23 since they directly relate to the capacity, the sucking
24 in of the water, are within the ambit of cooling water
25 intake structures?

26 MR. ELDER: Okay.

27 MS. BULLEIT: I made my point because you had

1 already stated that in several different ways earlier,
2 and I just wanted to make sure that the opposite side
3 is included.

4 MR. ELDER: Okay. That's fair.

5 MALE VOICE: We're having a hard time
6 hearing.

7 MR. ELDER: Her point was the summary of the
8 meeting ought to make clear that some people believe
9 that cooling tower is separate and apart from the
10 intake structure.

11 MS. BULLEIT: And that EPA has said that in
12 legal opinions.

13 MR. ELDER: All right.

14 MS. BULLEIT: And that, on the level playing
15 field question, some people believe that the best way
16 to ensure a level playing field is to have a consistent
17 process for making site-specific decisions.

18 MALE VOICE: You can say that again, Kristy.

19 MR. ELDER: Any other points on technology
20 before we move on to cost?

21 Rich?

22 MR. BOZEK: I didn't hear you mention that
23 there was a concern that a single technological
24 solution to a complex, site-specific problem in our
25 view would be deemed bad public policy.

26 MR. ELDER: Okay. That's not in there. You
27 got that one?

1 MALE VOICE: I'm sorry. I didn't hear it.

2 MR. ELDER: Rich's comment was that a single,
3 specific technology solution to this problem would be
4 bad public policy.

5 MR. BOZEK: To a complex --

6 MR. ELDER: To such a complex --

7 MR. BOZEK: That went to my point that I made
8 yesterday where you've got a situation where you've got
9 an interaction between, you know, an animal population
10 or animal populations and a human endeavor, and I could
11 not think of an example where we have in the past, in
12 our past history, made a single decision, one single
13 way to solve such an interaction, and we found
14 ourselves to be happy with the result.

15 MR. ELDER: We could talk about outlawing
16 PCBs or, you know, banning the use of tributyltin
17 paint. Those would be a simple national solution to a
18 problem.

19 MR. BOZEK: Are we going to open up the
20 debate again?

21 (Laughter.)

22 MR. ELDER: No. I'm just saying I'm just
23 pained by letting that hang out there. I'm not sure my
24 examples fit the complexity of this issue, but there
25 have been mandated, single solutions to environmental
26 problems.

27 MR. BOZEK: Yes, there has been.

1 MR. ELDER: And some would argue that they
2 are not necessarily bad public policy.

3 Brent?

4 MR. BRANDENBURG: Jim, in the BTA discussion
5 yesterday morning, there was discussion of two terms
6 that are fairly significant to 316(b). One is, What is
7 the technology? And I think the view was expressed
8 that making less of something is not either
9 historically or, by the intrinsic nature of that term,
10 a technology. I don't believe there was any dissent
11 from that.

12 The other was the discussion of capacity, and
13 I think there were two competing views there. One is
14 that it has to do with the amount of the withdrawal,
15 and the other is that it has to do with the --
16 essentially, the rate of withdraw.

17 I believe Jim Stein expressed a view that it
18 was in the statute and occupied an important role
19 because of its relevance to approach velocity, and
20 something that the rule-making people at EPA have
21 already acknowledged is a significant determinant of
22 impingement effects.

23 That is to say, with the smaller capacity
24 intake structure, you increase the approach velocity,
25 and therefore the -- a lot of impacts.

26 So I think a full recitation of the
27 discussion on BTA from yesterday's session should

1 really reflect the significance of both of those two
2 terms.

3 MR. ELDER: All right. On the staff -- feel
4 comfortable trying to capture that? Okay.

5 Bart?

6 MS. BULLEIT: One other thing that occurred
7 to me --

8 MR. RUITER: I was yielding to Kristy.

9 MS. BULLEIT: Oh, my God. Thank you, Bart.

10 In your summary of the discussion about other
11 technologies to reduce entrainment, in the sequence one
12 is left with the suggestion that certain technologies
13 were thrown out as candidates for reducing effects, and
14 then there was some dispositive statement made that all
15 of those were only effective for impingement.

16 In fact, Ned Taft made the point that there
17 were several of those technologies that were also
18 appropriate for entrainment, for reducing entrainment,
19 and I think that might be reflected. It wasn't just
20 gunder (phonetic) booms, which I think Ed mentioned.

21 MR. ELDER: Uh-huh.

22 MS. BULLEIT: There were other -- Ned
23 proffered some other technologies, as well as
24 locations, as possible ways of addressing entrainment
25 issues.

26 MR. ELDER: Good point. That would be at the
27 top of page two, from what I'm reading from. Okay.

1 Thank you.

2 Theresa?

3 MS. HANCZOR: I just want to clarify our
4 position on capacity.

5 We believe it means volume, and in the '76
6 regulations and in the '76 development document, the
7 EPA defined capacity to mean, "the volume of water
8 withdrawn through a cooling water intake structure."

9 Decision of general counsel number 41, the
10 Brunswick case, the Seabrook case, and Big Bend have
11 all followed this definition.

12 MR. ELDER: Okay. Dave?

13 MR. GRAVELLESE: I can't specifically verify
14 that all of those citations are correct, but certainly
15 that is the position that Theresa is taking, and I'm
16 comfortable having it in the minutes.

17 MR. ELDER: Okay. And hopefully one last
18 comment. Kristy?

19 MS. BULLEIT: Well, since we're going to get
20 into the technicalities, I would just point out that,
21 in exactly the same general counsel's opinion, the
22 general counsel said, "We recognize cooling towers are
23 not intake structure technologies," and the Agency has
24 never explained how it can -- what the technology is
25 that it can identify that is BTA and that is associated
26 with the specific flow reduction that it endorses. It
27 has never been called upon to identify a BTA for the

1 cooling water intake structure that is capable of
2 reducing flow.

3 And I would suggest that the cases -- the
4 specific permit decisions that were mentioned, in none
5 of those cases has there ever been any dispositive
6 litigation of that issue, including, I think, Seabrook.
7 I don't think that was one of the issues litigated in
8 Seabrook.

9 So I just throw that out. One of the points
10 we made yesterday was it's fine to look at capacity of
11 the intake structure. We agree with that. But you
12 have to identify what is the BTA for the intake
13 structure that achieves the reduction you're talking
14 about in capacity.

15 MS. HANCZOR: I just want to respond that
16 there has been no cases actually prescribing BTA, but,
17 without going to the specifics, Riverkeeper is involved
18 in a case pending right now in which that very issue is
19 in play, and we -- that very issue may be decided in a
20 case pending on the Hudson River.

21 MR. ELDER: Okay. May I move on to cost?

22 (No response.)

23 MR. ELDER: Okay. I shall.

24 Regarding yesterday afternoon's discussion,
25 these are a little bit more consistent with the format
26 that was in the attachment to the announcement letter.

27 First, Should cost play a role? Some

1 participants think that cost should play a role or
2 significant role in the permitting process. Others
3 think that cost should not be considered.

4 There are different interpretations of the
5 language of section 316(b). While some think that the
6 terms "best" and "available" include cost
7 considerations, others pointed out that economic
8 achievability is specifically mentioned in some
9 sections of the Clean Water Act but not 316(b).

10 Participants in favor of including cost also
11 provided -- I'm sorry, excuse me -- also pointed out
12 that the legislative history of 316(b), as well as
13 recent statutes and executive orders, imply that cost
14 should be taken into account.

15 There was disagreement about when cost should
16 be taken into account if a cost test is necessary.
17 Some argued that cost should be considered early in the
18 process, while others thought that cost should only be
19 considered after BTA is determined.

20 Participants pointed out that there are two
21 distinct types of cost: one, the cost of implementing
22 316(b) technology; and, two, environmental costs. All
23 participants agreed that all relevant costs should be
24 taken into account.

25 Lastly under this issue, it was pointed out
26 that costs needed to be taken into account because many
27 of the facilities are small. Another participant

1 argued that a wholly disproportionate test should take
2 care of this problem.

3 Then, moving on to types of cost tests,
4 regarding benefit/cost test, most participants agreed
5 that if costs are to be considered, a benefit/cost test
6 would be the appropriate test. However, there were
7 differing opinions about whether such a test should be
8 "wholly disproportionate" or a "reasonably
9 proportionate" test.

10 It was also suggested that incremental costs
11 and benefits are the appropriate measures to compare.

12 Further, participants pointed out the
13 difficulty of monetizing benefits and the uncertainties
14 inherent in benefit/cost analyses. Uncertainties
15 include the estimation of benefits, as well as future
16 costs of technologies.

17 It was mentioned that historically the costs
18 of technologies have dropped over time, and that future
19 costs are likely to be less than current costs.

20 Further, it was suggested that instead of
21 looking at total cost, one should consider a unit cost
22 -- for example, cost per kilowatt hour generated.

23 In regard to affordability, some participants
24 said that affordability should be taken into account.
25 Others argued that, in the spirit of emerging market
26 competition, plants rendered unprofitable by
27 environmental requirements should go out of business.

1 Further, it was argued that an affordability
2 test should not be applied at the facility level.
3 Instead, affordability should be considered in terms of
4 "widespread economic dislocation."

5 There were some other cost test issues. It
6 was further suggested that cost tests should be done by
7 sub-category -- for example, size or age.

8 Then, in regard to the level of cost test,
9 some suggested that a cost test should be applied at
10 the facility level because the vertical integration of
11 utilities no longer exists. Others suggested that cost
12 should be analyzed at the national level.

13 Finally, it was also suggested that there
14 should be -- I've got to make sense out of this one.
15 It was also suggested that a two-tiered approach would
16 consider both facility level and national cost.

17 With that, I'll open that one up to comment
18 in terms of what was left out or what was misconstrued.

19 Jim?

20 MR. STEIN: Yeah. I don't know that I heard
21 the point that cost/benefit analysis can be a valuable
22 way of organizing information in helping to form the
23 decision. Did I hear that? That was one of the --

24 MR. ELDER: I remember David stressing that
25 yesterday. Antje, I think that we should add a
26 statement to that effect to make the -- can tack that
27 on to the lead-in about page two about the benefit/cost

1 test.

2 Good point, Jim.

3 Ed?

4 MR. RADLE: If I could just for a minute jump
5 back to the technology issues, number three in the
6 outline that we received said it was going to look at
7 operational issues at power plants that deal with
8 effective mitigation, and I don't recall much of a
9 discussion of those things.

10 I was going to write to Deborah later on and
11 just put down some of the things that our utilities do,
12 and I think it would be useful for others that perhaps
13 have, you know, some interesting or unique attempts at
14 operational practices that would reduce impacts to
15 share those with EPA. We didn't do it at the meeting.
16 I'll do it, and I think it would probably be a good
17 idea for others to consider that, as well.

18 MR. SARBELLO: Or have it as one thing that
19 we didn't get to at this meeting that might still need
20 to be discussed.

21 MR. ELDER: Okay. Both are probably good
22 ideas.

23 Are we shifting back to cost/benefit?

24 MS. BULLEIT: Are we back to cost/benefit?

25 MR. ELDER: Yes.

26 MS. BULLEIT: Okay. On the question of how
27 -- the difficulty of assessing benefits or future

1 costs, the counterpoint was made that there are
2 effective ways of assessing, or at least identifying,
3 benefits and costs, and quantifying or reducing
4 uncertainty, and that might be included, because that
5 point was specifically made.

6 MR. ELDER: Okay. Fine. Bill?

7 MR. SARBELLO: There also was some dialogue
8 as to whether or not the -- well, whether or not the
9 people causing the impact would be paying for the loss
10 of the resource in terms of paying for the fish that
11 were killed. There was discussion about that, and you
12 might want to note that, as well.

13 MR. ELDER: That could be easily captured, I
14 think. Okay.

15 MS. FORD: I think, as somebody just kind of
16 indicated that costs -- the feeling that cost should be
17 done on a facility-by-facility or national, since I
18 made the point yesterday that it may make sense to look
19 at it on a watershed basis, and that would integrate it
20 into EPA's ongoing watershed emphasis and focus.

21 MR. ELDER: Correct. Thank you. We'll take
22 that and add that. Good point.

23 Okay. Let's move on to mitigation.

24 I haven't read through this yet, so if you
25 think I stumbled on cost, wait till you see me try this
26 one.

27 Some believed mitigation should play

1 absolutely no role as BTA for Section 316(b). Section
2 316(b) is a technology-based statute -- I might change
3 the word to "provision" there -- and BTA must deal with
4 the specific harm, which is impingement and
5 entrainment.

6 Others believe that there is a role for
7 mitigation. It is generally recognized that it would
8 not be BTA. It would need to be proposed and not
9 mandated.

10 I think we can clean up the word "proposed"
11 in terms of how UWAG minutes -- I think the word you
12 tended to use most often, David, was "offered" or
13 "volunteered."

14 MR. BAILEY: That's right. Either one.

15 MR. ELDER: Second point: a suggestion was
16 made to look at NEPA regulations for an example of a
17 hierarchical approach for addressing impact, and that
18 includes, as a last step, mitigation actions.

19 Third, a suggestion was made to refer to
20 mitigation projects as enhancements. This terminology
21 is used in conjunction with fisheries. Others were
22 uncomfortable with this term.

23 Fourth, some believe that mitigation might do
24 more to help natural resources than the technological
25 fix and would go on in perpetuity; however -- this is
26 killing me -- however, others stated that there are
27 instances where budget and political issues might

1 impede the long-term benefits.

2 The utilities proposed that "enhancements" be
3 allowed. The basis should be that it is voluntarily
4 offered because it is not BTA. Second, actions should
5 directly benefit the population impacted. And, third,
6 monitoring should be performed to evaluate the
7 effectiveness.

8 Continuing. Some are concerned that
9 voluntary actions would not be enforceable. Others
10 disagree and state that it could be a negotiated permit
11 special condition, which would then make it
12 enforceable.

13 Some were concerned that allowing mitigation
14 in lieu of BTA would be a complete abdication of EPA's
15 responsibility to implement and enforce the section of
16 the act. Some are concerned that you cannot predict or
17 measure the effectiveness of the mitigation
18 alternatives. Others stated that there must be some
19 goal to be accomplished and a means to measure the
20 achievement of these goals.

21 Some cautioned that it could be very
22 expensive to provide a baseline against which to
23 measure; however, that pre-planning was necessary.

24 Some stated that the use of mitigation
25 provided needed flexibility for stakeholders,
26 management -- oh, my. Try that one again. Some stated
27 that the use of mitigation provided needed flexibility

1 for stakeholders. Management of environment to surpass
2 the mere words of the statute and provided fishery
3 management flexibility.

4 What in the heck was that one?

5 (Laughter.)

6 MALE VOICE: I'll clarify that when you take
7 comments.

8 MR. BOZEK: I think that was my point, and I
9 was trying to make two statements, that the proposal
10 that Dave had discussed provides two things, in my
11 view. One that Martha captured was the flexibility for
12 the stakeholders and the process -- that may be the
13 permittee, the regulator, and the community -- to
14 achieve some flexibility and meet the need at hand.

15 Two -- and this is, I guess, the point that
16 you were stumbling on -- that it allows the natural
17 resource management to maybe surpass the mere words of
18 the statute, and that is, in other words, reach the
19 common goal of environmental protection in a creative
20 way to protect the integrity of the nation's waters.

21 MR. ELDER: Very articulate. Thank you.
22 Very good.

23 Some see the role of mitigation up front,
24 while others see the role as occurring as a last result
25 -- or resort. I'm not sure -- or as an addition to
26 BTA.

27 I think the closer we got to the time, the

1 more illegible things became. My apologies.

2 Last page. Some stated that the impacts of
3 entrainment are wide-spread, and therefore the
4 mitigation activities should take that into account.

5 Next point: there is general agreement that
6 there needs to be evaluation of any mitigation
7 activities, and that can be dealt with through NPDES
8 permit conditions. Others stated that it was difficult
9 to demonstrate actual benefits because of the
10 variability in environmental data.

11 Some believe that the design implementation
12 and evaluation should be site-specific.

13 And, finally, it was recommended to allow
14 flexibility on the issue of length and scope of
15 mitigation alternatives and that EPA merely indicate
16 that it has to occur.

17 Okay. Again, the same request. What was
18 botched and what, if anything, did we leave out?

19 Theresa?

20 MS. HANCZOR: While the specific impacts of
21 impingement and entrainment can only be addressed by
22 BTA, the environmental groups have said to the
23 utilities that if there are any impacts left over that
24 aren't addressed by BTA, then you could do all the
25 mitigation you want.

26 Secondly -- this goes back to technology, but
27 it is relevant here -- is that the burden is on the

1 utilities to drive technology. It's not up to the EPA,
2 nor is it up to the environmental community.

3 MR. ELDER: Okay. Other comments on the
4 mitigation section?

5 (No response.)

6 MR. ELDER: Okay. Let me move right on then.

7 I'll remind everybody that we said yesterday
8 the comment period in terms of written comments is
9 October the 5th. Some of you have made offers, such as
10 Ed recently, about providing the EPA things dealing
11 with operational measures that hopefully could be
12 captured and put on the internet site, within reason.
13 I don't know how lengthy this will be.

14 MR. RADLE: Jim, would there be a preference?
15 Bill suggested that maybe just put that in with a brief
16 part of the next -- I assume there will be another
17 meeting at some point in time. That might be worth
18 just a small, you know, agenda issue there.

19 MR. SARBELLO: That was kind of my question.
20 Will there be another meeting, and do you have a date
21 planned?

22 MS. NAGLE: There is a --

23 MR. ELDER: I'm going to turn it over to
24 Deborah in a minute or so, and she can address that.
25 Theresa?

26 MS. HANCZOR: Yes. Earlier in the day when I
27 talked about the amount of fish being killed at a

1 certain facility, I referenced a report by VERSAR, and
2 that was a 1989 report commissioned by the New Jersey
3 DEP, and it can be -- you can get it through the DEP.

4 MR. ELDER: Okay. A few last things.

5 We have an updated participants' list. It is
6 on the table outside. I thank the staff for generating
7 that.

8 Also, please remember when you walk out the
9 door to put your name tags in the recycle box.

10 With that, I want to thank you for your
11 participation and good behavior yet again. We're
12 developing wonderful camaraderie here.

13 With that, Deborah, I turn it over to you.

14 MS. NAGLE: I can tell it's close to quitting
15 time because the crowd starts to wiggle.

16 We're a little bit over our time so I'll keep
17 it brief, but I want to thank everybody for coming
18 today. For us, it provides some valuable input, and
19 it's just one example, I think, that shows EPA's
20 commitment to frequent and open dialogue with
21 stakeholders.

22 And I encourage you, for all of those who
23 have written comments on the topics that we discussed
24 today, on technologies and cost and mitigation, to
25 please forward those to me.

26 You're probably wondering what our next steps
27 are. We put a lot of time and effort in these last

1 couple public meetings. We'll be evaluating the
2 comments from the meeting, as well as those that we
3 receive later, as your written comments, as we move
4 forward in developing our regulatory options, and also
5 identifying research issues.

6 Somebody asked about, you know, what our
7 intentions are for any future meetings. At this time I
8 don't have any intention for another public meeting any
9 time soon, at least not within the next six months.
10 However, EPA does want to keep and intentions are to
11 keep the open dialogue with stakeholders, and so EPA,
12 as always, will consider any invitation from
13 organizations to meet and discuss issues related to the
14 Section 316(b) rule-making.

15 You have my name, my address, all the ways
16 you can get a hold of me. Most people here I think
17 have been successful by one mode or the other, and
18 that's in the participants' list. The updated
19 participants' list is located outside. Please help
20 yourself as you leave.

21 Is there any questions before you go?

22 MR. ELDER: I wanted to ask Kent, you'd
23 talked about an upcoming meeting next April, I believe,
24 in Atlanta.

25 MR. ZAMMIT: Right.

26 MR. ELDER: How did you leave it, in terms of
27 people being informed about the details of that?

1 MR. ZAMMIT: I'll take the updated attendance
2 list -- in fact, if I can get an electronic version of
3 it, it might be easier. But I'll take that and get a
4 mail-out to everybody here. But if you need additional
5 copies or if you know of additional people that want to
6 receive notification of that, let me know.

7 MS. NAGLE: I do have one last thing. If
8 people have suggestions, there are issues that you
9 don't think that EPA has addressed over the last couple
10 public meetings that you think you'd like to have
11 addressed in a forum of this sort, I would be
12 interested in hearing what those topics are, because
13 probably down the line we will have an opportunity
14 again such as this. So if you provide those to me, it
15 will be helpful as we lay out our strategy and plans
16 for the next year or so.

17 Thanks.

18 (Whereupon, at 12:20 p.m., the meeting
19 was adjourned.)

CERTIFICATE OF NOTARY

I, CHRIS HOFER, CVR, NOTARY PUBLIC, the officer before whom the foregoing testimony was taken, do hereby certify that the testimony that appears in the foregoing transcript was taken by me by stenomask means and thereafter reduced to typewriting by me or under my direction; that said testimony is a true record of the testimony given; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this testimony is taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

This certification is expressly withdrawn and denied upon the disassembly or photocopying of the foregoing transcript of the proceedings or any part thereof, including exhibits, unless disassembly or photocopying is done by the undersigned court reporter and/or under the auspices of Hunt Reporting Company, and the signature and original seal is attached thereto.

CHRIS HOFER, CVR
Notary Public in and for
the State of Maryland

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